SAFETY DEVICES ON HOUSEHOLD REFRIGERATORS

UNIVERSITY
OF MICHIGAN

JUL 6 1956

MAIN
READING ROOM

HEARING

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

SECOND SESSION

ON

H. R. 2181

A BILL TO REQUIRE SAFETY-CLOSING DEVICES ON THE DOORS OF HOUSEHOLD REFRIGERATORS SHIPPED IN INTERSTATE COMMERCE

MAY 28, 1956

Printed for the use of the Committee on Interstate and Foreign Commerce

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SAFETY DEVICES ON HOUSEHOLD REFRIGERATORS

MONDAY, MAY 28, 1956

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE OF THE COMMITTEE
ON INTERSTATE ON FOREIGN COMMERCE,
Washington, D. C.

The special subcommittee met at 10 a. m., pursuant to notice, in the committee hearing room, room 1334, House Office Building, Hon. Kenneth A. Roberts presiding, for consideration of H. R. 2181, which is as follows:

[H. R. 2181, 84th Cong., 1st sess.]

A BILL To require safety closing devices on the doors of household refrigerators shipped in interstate commerce

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any person to introduce or deliver for introduction into interstate commerce any household refrigerator unless the door of such refrigerator is equipped with a door-closing device which enables the door to be opened easily from inside the refrigerator.

SEC. 2. Any person who violates the provisions of the first section of this Act shall be guilty of a misdemeanor and shall upon conviction thereof be subject to imprisonment for not more than one year, or a fine of not more than $1,000, or both.

SEC. 3. As used in this Act, the term "interstate commerce" includes commerce between one State, Territory, possession, or the District of Columbia, and another State, Territory, possession, or the District of Columbia.

SEC. 4. This Act shall become effective six months after the date of its enactment.

Mr. ROBERTS. The subcommittee will be in order.

The Special Subcommittee of the House Committee on Interstate and Foreign Commerce is meeting this morning to resume public hearings on legislation which I introduced, H. R. 2181, which would require the installation of safety devices on household refrigerators shipped in interstate commerce so as to enable a person to open the doors from the inside. The purpose of this legislation, obviously, is to reduce, if not entirely eliminate the number of tragic deaths of children caught inside refrigerators which events have been occurring with increasing frequency.

I might say that Congressman Carlyle, who is the chairman of this Special Subcommittee, regrets exceedingly that he is unable to be here this morning as he is campaigning in his district. But he has asked me to proceed with this hearing and has expressed very great interest in this legislation.

The subcommittee first held hearings on the pending legislation in July 1955. At that time, Mr. Carl F. Oeschele, Deputy Assistant Secretary for Domestic Affairs of the Department of Commerce, and several industry witnesses testified with respect to this legislation.

The subcommittee was so favorably impressed with the testimony of the industry witnesses, to the effect that every effort was being made to perfect a satisfactory safety device, that it decided not to press for committee action on this legislation until the present session of the Congress. Instead, it was agreed that all parties concerned would work cooperatively with the National Bureau of Standards in a determined effort to develop a set of criteria for satisfactory safety devices whereby a refrigerator could be opened from the inside by a small child. It was the hope of the subcommittee in providing this opportunity last year for the Bureau of Standards and the refrigerator industry to work together, that effective safeguards could be developed to save the lives of innocent children and yet not work undue hardship on the refrigerator manufacturing industry. Chairman Carlyle and I, personally, and perhaps other members of this committee, hope that these tragedies can be eliminated by the industry itself through the use of an effective device, rather than by Federal legislation.

The purpose of the present hearing is to receive a report from the National Bureau of Standards and the refrigerator industry on the progress which has been made on the development of criteria for adequate safety devices. The committee hopes that, as a result of this hearing, a final set of criteria can be agreed upon which will provide safety from refrigerator death for innocent children.

I should like to make a part of the record at this point a letter dated July 30, 1955, which Chairman Carlyle wrote to the Secretary of Commerce in which the subcommittee asked that the National Bureau of Standards and the refrigerator industry work together to obtain a solution to the problem, and in which the subcommittee asked for a progress report on this work in January 1956. I should also like to make a part of this record the report of the Department of Commerce which was dated December 30, 1955.

Without objection, those letters will be made a part of the record.

(The matter referred to is as follows:)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C., July 30, 1955.

HON. SINCLAIR WEEKS,
Secretary of Commerce,
Department of Commerce,
Washington, D. C.

DEAR MR. SECRETARY: The Special Subcommittee on Health and Scence of the Committee on Interstate and Foreign Commerce has voted to report to the entire committee H. R. 2181, introduced by our colleague Mr. Roberts of Alabama, with the recommendation that the bill be favorably reported to the House. This bill would require the installation of safety devices on household refrigerators shipped in interstate commerce so as to enable a person to open the doors from the inside. Its purpose is to reduce, if not eliminate entirely, the number of tragic deaths of children caught inside refrigerators which events have been occurring with increasing frequency.

Hearings on H. R. 2181 were held on July 20 and 21, 1955. Mr. Carl F. Oeschle, Deputy Assistant Secretary for Domestic Affairs of the Department of Commerce, and several industry witnesses testified with respect to this bill. The subcommittee was so favorably impressed with the testimony of the industry witnesses, to the effect that every effort was being made to perfect a satisfactory safety device that would enable a person to open a refrigerator or icebox from the inside. that it has decided not to press for entire committee action on this bill until the next session of the Congress.

However, the subcommittee has expressed the earnest desire that during the adjournment period, all parties concerned shall work cooperatively with the

National Bureau of Standards in a determined effort to obtain a solution to this problem in order to prevent a needless loss of life of the children of this Nation. The subcommittee expects that the industry and the National Bureau of Standards will be ready to submit a progress report in January 1956, with their recommendation for further action. It is my understanding that Mr. Leslie D. Price, manager, engineering and safety regulations department of the National Electrical Manufacturers Association of 155 East 44th Street, New York, N. Y., will serve as contact man for the industry concerned with this problem.

Our committee trusts that you will give this subject your active support.

Sincerely yours,

F. ERTEL CARLYLE,
Chairman, Special Subcommittee on Health and Science.

DEPARTMENT OF COMMERCE,
December 30, 1955.

Hon. F. ERTEL CARLYLE,
Chairman, Special Subcommittee on Health and Science,
Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: This letter is in further reply to your letter of July 30, 1955, to the Secretary of Commerce. In that letter you describe the active interest of the Committee on Interstate and Foreign Commerce, and of the Special Subcommittee on Health and Science, in action necessary to minimize the hazard to small children from confinement in iceboxes and refrigerators.

As is indicated in your letter, the Department of Commerce, through its National Bureau of Standards, is assisting industry in the development of criteria to which devices allowing escape of confined children should conform.

In accordance with your letter and with suggestions made by your special subcommittee during the hearings on H. R. 2181 in late July 1955, officials of NBS and of the National Electrical Manufacturers' Association discussed and undertook independent consideration of the problem, subsequently conferred in Washington, and have, as a result, jointly drafted a set of criteria establishing minimum performances of devices which will minimize the risk created by those cooling devices.

The Children's Bureau of the Department of Health, Education and Welfare has cooperated in a study to determine the force which children between the ages of 2 to 5 could exert under conditions such as would face a child confined to an icebox. Such figures were not available elsewhere.

Substantial accord has been reached between representatives of industry and of WBS with respect to the criteria. It is expected that tentative criteria will be issued either today or tomorrow to assure that interested parties may comment thereon. This phase of development is most important as it will enable anyone with an interest in the field to point out if the criteria are unwarrantedly narrow or so restrictive as to preclude devices which may be proved effective in accomplishing our purposes.

It was indicated in your leter of July 30, 1955, that a progress report was expected in January 1956. Please consider this letter as such a report. It is expected that NBS and NEMA will, in the near future, prepare a joint report of action taken, together with documents developed cooperatively, which will be forwarded to you at that time.

Sincerely yours,

HOWARD B. CORWIN,
Deputy General Counsel.

Mr. ROBERTS. Now, for our first witness, I would like to have Mr. Marshall Bartlett, product planning manager, refrigerator and freezer division, General Electric Co., Louisville, Ky., to take the stand.

Mr. DIES. Before this witness testifies, Mr. Chairman, may I inquire if my information is correct. I read recently in some newspaper that there had been 18 deaths from this cause in the past few months. Is that correct?

Mr. ROBERTS. I would say that figure is substantially correct. I have a number of clippings which have come to my desk which Mr. Spal is going to insert into the record. I think the number will run pretty close to 18.

Mr. DIES. I think an editorial appeared in one of the Texas papers calling attention to the fact that some 18 children in recent months have died, or, at any rate, these deaths occurred since we met the last time.

Mr. ROBERTS. That is right. They are continuing just as they have in the past. In other words, the publicity campaigns and ordinances on the part of local and State authorities have not stopped the death of children.

All right, Mr. Bartlett.

STATEMENT OF MARSHALL BARTLETT, PRODUCT PLANNING MANAGER, REFRIGERATOR AND FREEZER DIVISION, GENERAL ELECTRIC CO., LOUISVILLE, KY.

Mr. BARTLETT. Mr. Roberts, there is a prepared statement here which I am not prepared to give.

Mr. Price, representing NEMA was planning to give this prepared statement and I think, at your pleasure, you might like to have him give that prepared statement before I appear as a witness.

Mr. ROBERTS. All right; I think that will be a good way to handle it.

The following clippings show that there have been a number of deaths since our hearings in July of 1955. I have no exact figures but these clippings will show that these deaths are continuing to happen.

(The clippings referred to are as follows:)

[From the Philadelphia Inquirer, August 1, 1955]

TWO CHILDREN DIE IN OLD REFRIGERATOR

TOKYO, August 1 (Monday) (AP).—A large abandoned refrigerator yesterday claimed the lives of two children. It was the first reported case in Japan, where abandoned refrigerators are scarce.

Kyoko Kimura, 10, and her 4-year-old brother, locked themselves inside the refrigerator while playing hide-and-seek.

[From the Montgomery Advertiser, August 18, 1955]

YOUNG BROTHERS DIE IN ICEBOX

PHILADELPHIA, August 17 (AP).—A 5-year-old boy told police today he clanged shut the door of an old refrigerator in which two young brothers—aged 5 and 2—were suffocated yesterday.

The playmate, Carl Jenkins, said he couldn't open the door again after closing it. The bodies of Lewis Andrews, 5, and his brother, Lee, 2, were found by their mother 6 hours later.

Detectives Patrick Ryan and Donald Bauer, of the juvenile aid bureau, said the three boys, all Negroes, were playing in a vacant apartment in the north Philadelphia building where the Andrews boys lived.

The detectives said the youngsters took turns going inside the box. They said that when Carl found he couldn't open the door—either because he wasn't strong enough or not tall enough—he became afraid and went home. He didn't say anything until today.

[From the Washington Post and Times Herald, April 18, 1956]

LEAVING 40 REFRIGERATORS UNGUARDED COSTS BUILDING WRECKER $250 FINE

A professional building wrecker forfeited $250 bond yesterday for leaving more than 40 refgrigerators unattended for 3 months on a vacant lot at 1812 1st Street SW.

Assistant Corporation Counsel Clark F. King said the refrigerators came to the attention of Fourth Precinct Private Irving E. Lawson more than 1 week ago.

District police regulations prohibit the possession of unused or discarded refrigerators capable of trapping a child.

At a preliminary hearing before King yesterday the wrecker, Thomas Albert Darouse, 27, said the refrigerators were obtained from Government buildings he contracted to demolish.

Darouse, listed at 6723 Riverdale Road, Riverdale, Md., told King he placed all the refrgerators door-to-door so they could not be opened but that persons interested in purchases had moved them, exposing the latched doors.

"Insofar as a child is concerned, they are potential death traps," King remarked to Darouse. "You would have accomplished the same thing if you had bear traps sitting out there."

[From the New York Herald Tribune, May 17, 1956]

QUEENS BOY FOUND DEAD IN ICEBOX

SEARCH FOR MORE SUCH HAZARDS ON

A 32-man task force of policemen—some called in from days off and vacations—searched the Rockaway Beach area of Queens yesterday for old iceboxes after a 5-year-old boy perished in one on Tuesday. Four were found and summonses were given out in each case.

The boy, Ivison Austin, Jr., son of Mr. and Mrs. Ivison Austin, of 189 Beach 83d Street, Queens, was found dead in a 6-foot icebox in which he had apparently locked himself, on the porch of an unoccupied summer house at 182 Beach 83d Street. Police found him at 11:15 p. m.

GETS SUMMONS

Police gave the owner of the house, Max Greenberg, of 317 Georgia Avenue, Brooklyn, a summons charging violation of a penal code provision against abandoning iceboxes or other furniture with doors that might be a hazard to children playing.

The boy's mother, Mrs. Elizabeth Austin, 27, who has 7 other children, said he left home for kindergarten at Public School 44, about 5 blocks from his home, shortly before noon Tuesday. The boy apparently got no farther than the summer house with the icebox on its porch diagonally across the street from his home.

HOUSE-TO-HOUSE SEARCH

Mrs. Austin said she assumed he was not playing, but that she became concerned enough to call the police at 9:40 p. m. Police made a house-to-house search in which the closed icebox was found.

Police Capt. John C. Peterson organized the search yesterday for iceboxes in the area. In the afternoon, he reported that summons had been given in four cases—1 for an icebox found in a driveway, 1 on a porch, and 2 in backyards.

Captain Peterson said he also planned to call the owners of 75 other summer houses in the area to find out whether there were iceboxes in the houses which might be a hazard to children. Children sometimes break into summer houses through windows, it was explained.

Mr. Greenberg's summons is returnable today in Rockaway Beach magistrate's court. The charge is a misdemeanor for which the punishment on first offense is a $25 fine, and on second and subsequent offenses, $100. No alternative jail sentence is specified, but magistrates may impose imprisonment of 1 day for each dollar of fine the person convicted fails to pay.

[From the Alexandria Gazette, Alexandria, Va., May 16, 1956]

BOY AND DOG DIE IN OLD ICE CHEST

HUTCHINSON, KANS. (AP).—A 6-year-old boy and his dog died together inside an ice chest.

They were found curled up inside the upright metal chest. The tiny dog's body was covering the one small air vent into the box.

Dead was Throval L. Johnson, son of Mr. and Mrs. Gerald L. Johnson. The mishap occurred on the farm of Mr. and Mrs. T. E. Sorenson, north of Hutchinson.

The boy and his dog were missing 3 hours before they were found in the chest in the yard.

[From the St. Petersburg (Fla.) Times, March 30, 1956]

ILL MOTHER LIES ABED, TOTS KILLED

FORT MEYERS (AP).—A mother who slept late because of illness found her two small children dead of asphyxiation yesterday in an unused refrigerator. Apparently they entered in play and could not open the door from the inside.

The victims were Sharon, 8, and Raymond, 6, only children of Mr. and Mrs. Edward Heeb.

Heeb went to work about daylight. About 9 a. m., the children awakened Mrs. Heeb. She told them to play a little while and then she would fix their breakfast.

Mrs. Heeb, who has had an attack of tonsilitis, said it was 11 a. m. before she awoke. She did not see the children in the house or yard.

Then she saw the trays had been removed from an old refrigerator and stacked beside it. This refrigerator had been put in the corner of the dinette when a new refrigerator was bought recently.

She found the bodies inside the old refrigerator. Doctors tried in vain to revive the children.

County Judge Archie M. Odom, acting coroner, ruled the deaths accidental.

[From the Electric Appliance Service News, November 1955]

Do It or Else

WARNS REFRIGERATOR MAKERS TO INSTALL SAFETY LOCKS

WASHINGTON.—One of the sponsors of legislation to outlaw refrigerator "coffins" has warned that he will press for congressional action next year unless manufacturers act voluntarily to install safety devices.

Representative Kenneth A. Roberts, Democrat, of Alabama, said the National Bureau of Standards has completed work on a set of criteria for safety devices to assure their effectiveness both as a latch and a safety mechanism.

"The Bureau will give the National Electrical Manufacturers Association (NEMA) an opportunity to make their views known regarding the criteria," he said. "It is expected that criteria acceptable to both NEMA and the Bureau of Standards can be agreed upon before the end of the year, and that such criteria will be made available for consideration by the suppliers and manufacturers generally."

Pointing out that the problem was turned over to the Bureau of Standards after a hearing was held here last July, Representative Robers said he remains hopeful that the industry will decide to manufacture such devices without the enactment of a law.

"If it does not, however, I intend to urge Congress to enact a bill as the only way the lives of innocent children can be saved." He pointed out that five more deaths have occurred since the committee had its hearings.

He emphasized that publicity campaigns and city ordinances forbidding the abandonment of old refrigerators have not stopped the constantly increasing number of children's deaths. He said the only real way to eliminate the refrigerator "coffin" is not to manufacture it.

"The inventive genius of the United States which led it to discover the atom bomb can surely invent a safety device so that refrigerators can be opened from the inside by the pressure of a little hand," he exclaimed.

So Children Can Live

NEW GE REFRIGERATOR LINE HAS MAGNETIC SAFETY DOORS

LOUISVILLE.—With the protection of children in mind, as well as greater convenience for consumers, General Electric Co. has installed magnetic doors on its entire line of 1956 refrigerators.

An Alnico magnet is used that keeps the door shut, yet it opens easily and swings shut by itself, the company said.

The magnet is a permanent fixture, there are no moving parts to get out of order, and it maintains its magnetic power indefinitely, GE stated. The latch simply consists of a magnet in the door and a strike plate on the surface of the cabinet.

Doors on two combination refrigerator-freezer models can also be opened by touching a full-width toe pedal.

[From Clovis News-Journal, October 17, 1955]

BOY ESCAPES DEATH IN ICEBOX; CHARGES FILED AGAINST OWNER

DRAINPIPE SAVES HIS LIFE

A little boy's frantic calls from the dark interior of an icebox went unheard yesterday while relatives, neighbors, and police searched the neighborhood for the missing youngster.

Henry Olguin, 3, who was saved from suffocation by oxygen from the drainpipe, had been missing for 2 hours when his mother, Mrs. Helen Olguin, 205 Hinkle, called police and reported he was lost.

City Policeman Frank Spitz rushed to their home and checked the neighborhood. He didn't look in the back of the house because the family told him they had already searched there.

No trace of the youngster could be found.

Spitz returned to the police station and reported something was definitely wrong. "Someone would surely have seen the boy if he had been wandering around. All the child had on was a pair of yellow shorts," he said.

He returned to the Olguin's apartment on Hinkle and made another search of the premises. This time he went to the backyard and noticed an icebox on the back porch.

Sitting in front of the icebox was the youngster's pet dog.

Spitz hurriedly investigated.

On opening the icebox door, he discovered Henry's limp body. The discovery occurred 3 hours after the boy was found missing.

The child was taken out of the icebox only partly conscious and bathed in sweat. The dusty interior bore the child's handprints.

[From St. Paul Pioneer Press, October 18, 1955]

MOTHER FINDS MISSING SON, 3, NEAR DEATH, TRAPPED IN FREEZER

NEIGHBOR GIVES TIP TO RESCUE

A 3-year-old St. Paul boy spent Monday afternoon locked in a food freezer in the basement of his home and survived.

Wrapped in blankets, his temperature slowly climbing back to normal, Mark Swanson, son of Mr. and Mrs. Carl E. Swanson of 1166 Colette Place, is in good condition at Ancker Hospital.

He would say nothing about his experiences which apparently began about 11:30 a. m. That was when his mother first missed him.

After searching the house, Mrs. Swanson turned to neighbors for aid in combing the area around the house for the missing youngster. They found nothing.

POLICE JOIN SEARCH

Patrolman James J. Bearth was called in at 12:30 p. m. to help locate the boy. He had no luck. At 2:23 p. m., he called headquarters for further instructions.

Headquarters told him to keep looking, assigned another patrolman, Robert H. Peterson to give a hand.

Peterson went to the Swanson home to be certain it had been searched. Assured it had, he left, with Lee Swanson, 5, a brother of Mark's to look over the neighborhood again.

It was then that Mrs. Sidney K. Schmuckler of 1160 Colette place, a neighbor of the Swansons, suggested to the worried mother they look in the upright food freezer in the basement. It was the only place they hadn't looked.

Shortly before 3 p. m., Mrs. Swanson opened the freezer door.

Mark, curled up on the bottom shelf, saw her and cried. Somehow, he had managed to open the heavy door of the refrigerator box and climb inside. The door slammed shut, trapping him.

"I don't know how he managed to get into that small space," Carl Swanson, his father, said. "It's only about 11 inches high. Thank God, he apparently is going to be all right."

BOY SUFFERS CHILLS

Taken to Anker Hospital by Patrolman Peterson, Mark's body was racked by chills and he shivered violently while doctors examined him.

His temperature was so low it had to be taken with a special thermometer used in "deep freeze" heart surgery at the hospital.

It registered 91°.

No one knows exactly how long the youngster was in the freezer. But the low temperatures may have slowed his body processes sufficiently to prevent him from using up the air inside the box too fast and suffocating.

[From the Washington Post and Times Herald, September 17, 1955]

3-YEAR-OLD BOYS DIE IN ICEBOX

COLUMBIA, S. C., September 16 (UP).—Two small boys were suffocated yesterday when they became trapped in an old icebox while playing, police reported today.

The youngsters, William E. Smith, 3, and David Dunmore, 3, were cousins.

The icebox belonged to a neighbor who was evicted from his house Monday under court order, police said. His furniture, including the icebox, had been set out in the yard.

[From the Evening Star, Washington, D. C., September 16, 1955]

TWO CAROLINA BOYS DIE IN ICEBOX TRAGEDY

COLUMBIA, S. C., September 16 (AP).—Two youngsters suffocated here today in an old-fashioned icebox placed outside when the owner was evicted from his house by court order.

The icebox was in a yard separated from a city-operated playground only by a wire fence. The boys' grandmother, with whom they were staying while their mothers were working, thought they were playing at the park, police said.

The city of Columbia and the State of South Carolina passed statutes some time ago banning abandoned iceboxes with doors.

[From the Los Angeles Times]

ICEBOX DEATH LAW STUDIED

SHED TRAGEDY BARES GLARING DEFECT IN COUNTY STATUTE

Deaths of two small boys in an abandoned icebox yesterday showed up a glaring defect in the county law, adopted last year to prevent such tragedies.

Albert Arebalo, 8, and David Anthony Fennessy, 3, were found suffocated in an icebox stored in a shed behind 7611 Lou Dillon Avenue Friday night.

But the county law requiring the padlocking or removal of doors from abandoned iceboxes applies only to iceboxes left in the open, authorities said. The fact that the boys were able to get into the shed made it doubtful whether the law could be applied.

[From the Los Angeles Times, August 18, 1955]

BOY TELLS HOW ICEBOX DOOR SHUT ON PAIR

PHILADELPHIA, August 17 (AP).—A 5-year-old boy told police today he clanged shut the door of an old refrigerator in which 2 young brothers, aged 5 and 2, were suffocated yesterday.

The playmate, Carl Jenkins, said he couldn't open the door again after closing it. The bodies of Lewis Andrews, 5, and his brother, Lee, 2, were found by their mother 6 hours later.

Detectives said the youngsters took turns going inside the box. They said that when Carl found he couldn't open the door—either because he wasn't strong enough or not tall enough—he became afraid and went home. He didn't say anything until today.

[From Retailing Daily, October 11, 1955]

CRITERIA DRAFTED FOR SAFETY DEVICES ON REFRIGERATORS

WASHINGTON, October 10.—The National Bureau of Standards has drafted a set of criteria for safety devices on refrigerator doors, Representative Kenneth Roberts (Democrat, Alabama) said today.

Mr. Roberts said the Bureau will now give the National Electrical Manufacturers Association an opportunity to express its views, adding that it is expected criteria acceptable to both will be agreed upon before the end of the year and will be made available for consideration by suppliers and manufacturers generally

It is hoped, Mr. Roberts said, that industry will continue to cooperate and will manufacture a safety device without enactment of law. If not, he said, he will urge Congress to enact his bill requiring a safety device for all refrigerators shipped in interstate commerce.

He pointed out five more children suffocated to death since hearings were held on his bill earlier in the year, and said publicity campaigns and local ordinances have not stopped the increasing number of deaths.

[From the Evening Star, Washington, D. C., September 3, 1955]

TWO BOYS SUFFOCATE IN UNUSED ICEBOX

DETROIT, September 3 (AP).—Two young Detroit children suffocated yesterday when they were trapped in an unused icebox.

They were Marvin Jones, 4, and his 3-year-old brother, Michael.

When found the children were still alive, but died en route to the hospital.

A search was organized when their mother, Juanita, 28, noticed them missing from the backyard, where they were playing.

The icebox was located in a vacant apartment in the building where the boys lived. They were found by two older boys hired to clean the apartment.

[From the Los Angeles Times]

RULING SOUGHT ON ICEBOX IN WHICH TWO BOYS DIED

Chief J. Gordon Bowers, of the sheriff's crime prevention bureau, said yesterday he will ask the district attorney's office for a ruling on whether the owner of an abandoned icebox in which two little boys suffocated to death Friday can be held criminally responsible.

Chief Bowers said he will talk to Howard Hurd, chief of the district attorney's complaints department, tomorrow morning on the basis of a State law which was enacted last year after scores of youngsters in the United States died after being trapped in old iceboxes. The law requires that icebox doors be removed or padlocked before the box is abandoned. Bowers said there was some doubt of the liability in Friday's tragedy because the box was in a shed, and not in the open as specified by the law.

He said also an inquest, date of which will be determined tomorrow, will be conducted later in the week, probably at Pierce Bros. Mortuary in Torrance where the young victims, Albert Arebalo, 8, and David Anthony Fennessy, 2, were taken.

The boys were found dead in the box in a shed behind 7611 Lou Dillon Street, on property owned by John Richardson. Richardson told deputies he had stored the box there about 6 months ago.

[From the Los Angeles Times]

FOUND WEDGED IN REFRIGERATOR, BUT BOY LIVES

DETROIT, August 26 (AP).—Missing for 2 hours, 4-year-old Gary Patterson was found between 2 narrow shelves when his mother opened the refrigerator last night to get a bottle of milk.

His 9-day-old baby sister, Linda, had cried for food. That may have saved Gary's life.

"He was frothing at the mouth when I found him," Mrs. Thomas Patterson said.

[From the Evening Star, Washington, D. C., August 20, 1955]

ELECTRIC REFRIGERATOR IS DEATH TRAP FOR BABY

STEPPVILLE, ALA., August 20 (AP).—A large electric refrigerator was a death trap yesterday for a baby boy, but his two sisters were revived.

Coroner Grady Moss said Jerry O'Neal Burns, 19 months, was dead on arrival at a nearby clinic. Geraldine Burns, 10, and Elaine, 6, revived when fresh air reached their lungs.

Mr. Moss said the children were left at their farm home while the parents worked in a field. He said Terry Odell Burns, twin of the dead boy, apparently closed the door on the three after they crawled inside.

The mother, Mrs. James O. Burns, found them when she noticed the food had been taken out of the refrigerator.

STATEMENT OF LESLIE D. PRICE, MANAGER, ENGINEERING AND SAFETY REGULATIONS DEPARTMENT, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

Mr. ROBERTS. You may proceed, Mr. Price.

Mr. PRICE. Thank you, Mr. Roberts.

Gentlemen, I am Leslie D. Price, manager of the engineering and safety regulations department of the National Electrical Manufacturers Association, appearing before the subcommittee on behalf of the NEMA household refrigerator and freezer section. The purpose of this statement is to present a progress report to the subcommittee on the joint efforts of the National Bureau of Standards and NEMA to resolve the problem involving the entrapment of children in refrigerators, freezers, and airtight containers.

As you gentlemen recall, at the closing of the hearing before you on July 21, 1955, I made a statement that the manufacturers of household refrigerators and freezers would be pleased, if requested by your subcommittee, to arrange for meetings with the Department of Commerce and with the Bureau of Standards to explore the possibility of a reasonable solution to this problem. Shortly after the hearing your chairman, the Honorable F. Ertel Carlyle, requested the Secretary of Commerce and NEMA to work cooperatively in a determined effort to obtain a solution to this problem.

As rapidly as possible a special committee of executive engineers of refrigerator and freezer manufacturers was formed in NEMA to carry on its assignment. Meetings were held with representatives of the National Bureau of Standards, under the direction of Dr. A. T.

McPherson. Tentative drafts of criteria for the means to prevent accidental suffocation in household refrigerators and home freezers were suggested by the National Bureau of Standards and were the subject of several joint meetings.

Thus far, while we have had a number of meetings, some differences between the viewpoint of the representatives of manufacturers and the National Bureau of Standards exist. However, our objectives have always been the same, that is, to arrive at some reasonable criteria.

One particular point of difference is the amount of force which children of various age groups may be able to exert to open a cabinet door from the inside, as against the minimum amount of releasing force which may be required to produce and retain the essential refrigeration efficiency for the preservation of food. Discussion at a recent joint meeting of representatives of NEMA, the National Bureau of Standards, and the Children's Bureau of the Department of Health, Education, and Welfare, brought into clear focus the absence of authoritative data which are needed to determine intelligently the proper force. Manufacturers favor a figure which corresponds to their experience in designing and manufacturing refrigerators, while the Bureau of Standards tends toward much lower forces which were developed through some preliminary tests made cooperatively between the Bureau and the Children's Bureau.

In order to aid in the determination of the proper force which may be required to assure reasonable safety, NEMA has expressed its willingness to support financially a research program, which is presently being explored by the Bureau of Standards and the Children's Bureau.

I believe Dr. McPherson will report also on that to you later.

While there are many problems which have been raised due to the absence of conclusive data concerning the psychological factors involved in the child's attempt to escape from an enclosure, it is our believe that when reliable facts are developed, they may effectively resolve these present differences between the two groups.

In the meantime, NEMA has vigorously promoted and financed a program of the National Safety Council to make the public both aware of the problem as it relates to abandoned refrigerators and to eliminate fatalities from that source.

The effectiveness of this program is being realized through the long-range campaigns that have been conducted by civic-minded groups throughout the United States to assure the removal of doors or latches from abandoned refrigerators or freezers which have been discarded. In addition, 36 States have passed laws making it illegal to abandon a refrigerator or similar airtight containers, without first removing the door or the door latch. Further, evidence of the effectiveness of this campaign is the report that, to the present, four deaths to children have been reported in 1956.

The figure, I believe, of 18 is a summation of the deaths that we have from Refrigeration Service Engineers Society in the year 1955. This report shows but 2 in 1956, but there have been 2 quite recent additions to that, unfortunately.

I am sure that Dr. McPherson and his colleagues in the National Bureau of Standards will agree with us that the development of practical criteria which could be used to evaluate the reasonable safety provided by various devices, to cope with the hazard of entrapment of children in airtight containers, has met with unanticipated complica-

tions. These require further study and evaluation. The National Bureau of Standards, the manufacturers, and others concerned, recognize the uselessness of expending huge sums of money in developing devices which may not be effective in their operation when they may be required, and the use of which might result in a sense of false security on the part of parents and the public generally.

May I interject a few words of tribute to Dr. McPherson and his colleagues in the National Bureau of Standards. In all of the work which has been carried on, they have been most efficient, competent, and understanding. Our relationship has been extremely pleasant, and we in the electrical manufacturing industry have grown to appreciate more and more the intense devotion of the staff of the National Bureau of Standards to the prompt solution of this problem through their scientific approach. They have applied their broad knowledge of all of the factors involved and have cooperated with the industry in every possible way; particularly by making their facilities and staff available for meetings, consultation, and technical study.

In conclusion, it is obvious that, while a solution to the problem has not yet been realized, definite progress has been made. Individual manufacturers have placed on the market refrigerators designed to meet a reasonable solution. Others are sure to follow. NEMA, therefore, still believes that this problem will be solved by industry-government cooperation, and that no Federal legislation will be needed.

Thank you, sir.

I might add, if I may, Mr. Roberts, that we have with us some executives and executive engineers representing various manufacturers of electric refrigerators, household refrigerators, and freezers, Mr. W. R. Moll, of Admiral Corp.; Mr. J. R. Oberly, of Admiral Corp.: Mr. Marshall Bartlett, of General Electric Co.; Mr. Byron Booher, of the Frigidaire division, General Motors Corp.; Mr. H. F. Powell, American Motors Corp.; Mr. F. L. Tarleton, of the Hotpoint Co.; Mr. R. S. Buchanan, Westinghouse Electric Corp.; Mr. J. B. Gibson, of the Norge division of Borg-Warner Corp.; Mr. M. C. Terry, of the Philco Corp.; Messrs. Don Benson and L. K. Fox, of the NEMA staff, are also here with me.

I am sure that any of these gentlemen will be pleased to attempt to answer any questions which you may have.

Mr. ROBERTS. Before opening up your testimony for questions, do you have a copy of the criteria that were set forth by the Bureau of Standards and, I believe, transmitted to the industry?

Mr. PRICE. I have, sir.

Mr. ROBERTS. Transmitted to the industry back in December back in 1955?

Mr. PRICE. Yes, sir.

Mr. ROBERTS. Do you intend to offer that as an exhibit?

Mr. PRICE. I can do so, sir; I would be very happy to. I have both the notice that went out as a press release to the technical press and a copy of the proposed criteria which I should be pleased to submit for inclusion in the record.

Mr. ROBERTS. You are offering that for the record?

Mr. PRICE. Yes, sir.

Mr. ROBERTS. Without objection, that may be made a part of the record.

(The matter referred to is as follows:)

PERFORMANCE CRITERIA FOR DEVICES DESIGNED TO PREVENT SUFFOCATION IN REFRIGERATORS AND HOME FREEZERS

Industry and Government have again demonstrated that cooperation can solve problems of safety to the public. Cooperation between the National Bureau of Standards and the manufacturers of household refrigerators and freezers, as represented by the National Electrical Manufacturers Association, has resulted in the development of new criteria for judging the reasonable safety of the means for release of persons who might be entrapped in these or other airtight enclosures. These criteria have been issued to industry, and all others concerned, for study and evaluation. They consist of a list of 9 safety requirements and 9 design requirements for normal use.

This cooperative project was undertaken following consideration by congressional committees of the hazard to young children presented by abandoned airtight cabinets, such as refrigerators, which have resulted, over the past years, in the suffocation of a number of children throughout the United States. The congressional activity was in connection with hearings on bills that had been introduced making it mandatory to include in the design of household refrigerators some type of inside release mechanism which would permit a person imprisoned to open the door from the inside.

The congressional committees recognize the effectiveness of the industry-supported programs in controlling the hazards presented by abandoned airtight containers. Through education supported by legislation in some 36 States, it is now common practice to remove doors or latches before discarding any refrigerator or freezer to render it harmless. The congressional subcommittees were also impressed by the testimony of industry witnesses to the effect that every effort was being made to perfect satisfactory safety devices which would enable a person to open a refrigerator or icebox from the inside. It was felt, however, that basic criteria of reasonable safety should be found, which would enable manufacturers in the future to incorporate in the design of their products means for preventing the suffocation of children entrapped in refrigerators or freezers in use. Therefore, the Secretary of Commerce was requested, by the chairman of the Special Committee on Health and Science of the Congress, to make available the facilities of the National Bureau of Standards to cooperate with industry in the development of such criteria. The result of the joint effort of the National Bureau of Standards and industry is the following draft of criteria which, it is anticipated, will form the basis for industry safety standards.

The industry is now being asked to comment on the possibility of meeting these criteria. Comments may be addressed to L. D. Price, Manager, Engineering and Safety Regulations Department, National Electrical Manufacturers Association, 155 East 44th Street, New York 17, N. Y.

PROPOSED[1] PERFORMANCE CRITERIA FOR DEVICES DESIGNED TO PREVENT SUFFOCATION IN REFRIGERATORS AND HOME FREEZERS

Three policy questions were discussed and substantial agreement was reached on them as follows:

1. Should the criteria cover "refrigerators now in use," "new refrigerators at the time of sale," "new refrigerators during their normal life," or any of these categories after they are abandoned?

Conclusion: Criteria should not be made retroactive to include "now in use," "now abandoned," or "now available for sale" refrigerators, but should be made applicable to all new production at some set date after adoption of criteria to provide "lead time" in manufacture. Criteria should be such that a device complying with them would reasonably last the lifetime of the refrigerator and be operable at least at the time of abandonment after disconnecting it from the source of energy. Criteria should be so drafted, if possible, that they could be used to evaluate devices offered for voluntary installation on refrigerators "now in use" or "now available for sale."

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[1] Based on agreements reached at the joint meeting on November 10, 1955, between NEMA Household Refrigerator and Freezer Committee and representatives of National Bureau of Standards.

The criteria should not specify what device must be put on a refrigerator or home freezer, but should set forth the performance required of any device to provide satisfactory protection, leaving to the manufacturer the choice of which device he elects to us.

2. Should the criteria be applicable to vertical types of refrigerators and home freezers, chest type freezers, and ice refrigerators?

Conclusion: If possible, the same criteria should apply to all of these types of equipment. However, some of the devices that provide adequate protection for one type may not provide adequate protection for other types, so the choice of method may have to be more restricted for some classes of equipment than for others.

3. How should the criteria be put into effect?

Conclusion: There was general agreement that compliance with the criteria should be made a part of the Underwriters' Laboratories requirements for safety on new refrigerators, if this could be worked out.

CRITERIA

I. Safety requirements

Refrigerators and home freezers shall be designed to prevent suffocation of persons trapped inside by providing one of the following methods of securing enough ventilation to limit the CO_2 concentration to 3 percent, when CO_2 is liberated continuously inside the cabinet at a rate of 0.35V cubic feet per hour and there is no temperature difference between inside and outside the cabinet where V is the internal volume of the cabinet.

1. A latch without a hooking action such that the door can be opened[1] from inside the cabinet by a force of * pounds exerted on the door midway between hinge and latch sides of the door.

2. A device for hooking-type latches operable from inside the cabinet that will release the latch and permit the door to be opened with a force of * pounds or less exerted on the door midway between the hinge and latch sides of the door, accessible to all spaces of 2 cubic feet or more or to all spaces of this size that could be created by removing or adjusting one or more shelves[2] (drawers, or baskets) unless one dimension of such spaces is 8 inches or less.

3. An interlock of the latch with the shelving such that the removal of any one or more shelves will release the latch and permit the door to be opened with a force of * pounds or less exerted on the door midway between hinge and latch sides of the door when the removal of such shelves creates an unobstructed space of 2 cubic feet or more unless 1 dimension of such a space is 8 inches or less. This method cannot be used in refrigerators or freezers which have spaces of 2 cubic feet or more with all dimensions greater than 8 inches when all shelves are in place.

4. A release for hooking-type latches that functions on interruption of the electric or gas supply. The release shall function to prevent relatching after the first door opening following interruption of the electric or gas supply, and immediately in response to manipulation of an inside triggering device complying with the requirements of section 2.

5. A device that will release the latch and permit the door to be opened, with a force of * pounds or less exerted on the door midway between hinge and latch sides of the doors, within 5 minutes after a CO_2 concentration of 3 percent is attained in the refrigerator for the "in use" condition of the refrigerator, combined with an interior release for the latch that complies with the requirements of section 2 and that will function immediately in response to manipulation of the inside release.

6. A device, triggered by the human voice in a suitable frequency, that will release the latch and permit the door to be opened by a force of * pounds or less in response to a shout or cry from the person trapped inside for the "in use" condition of the refrigerator, combined with an interior release for the latch that complies with the requirements of section 2 and that will function immediately in response to manipulation of the inside release.

7. A release for the door hinges, using the principles and complying with the performance of sections 2 and 3 above, that will permit the door to be "opened."[1]

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[1] The word "opened" in this draft shall mean moving the door gasket off its mating face at least enough to provide the ventilation required in the introductory statement for safety requirements.

[2] Shelves as used in this draft shall include removable shelves, drawers, baskets, baffles, etc.

8. A panel, plug, or wall section, accessible to all spaces of 2 cubic feet or more or to all spaces of this size that could be created by removing one or more shelves unless one dimension of such spaces is less than 8 inches, that can be forced out by a directly applied pressure of * pounds or less.

9. A panel, plug, or wall section whose ejection can be triggered by a device using the principles and complying with the performance of sections 2 or 3 above.

II. Design requirements for normal use

1. The safety features of the device shall not be rendered inoperative by failure of the electric or gas supply.

2. The device shall provide or shall not prevent a substantially airtight door closure against the door gasket during normal operation. Test: Light visibility at gasket surface.

3. A device that does involve the door latch or hinges shall provide substantially airtight closure of the refrigerator or freezer during normal use.

4. The door shall not automatically open on failure or interruption of the electric power or gas supply.

5. In the event of electric or gas supply failure during normal use the device in its safety position shall not prevent making contact between the door gasket and its mating surface on the door or cabinet.

6. The device shall not provide thermal paths through the door, cabinet, or gasket construction that will cause exterior sweating when operated in ambient conditions of 90° F. d. b. and 83° F. w. b.

7. For test purposes, the safety device shall function reliably after 300,000 door closures.

8. For test purposes, the device shall function reliably after 1,000 hours exposure of the inside and outside of the refrigerator or home freezer at 75° F. and 90 percent relative humidity. Test to be made with the door open.

9. The device shall not be rendered inoperative as a result of food storage, cleaning, or defrosting during its normal life span or as a result of storage of the complete refrigerator as determined by the following tests:

(*a*) The device shall perform its intended function at room temperature after storage of the complete refrigerator in an ambient temperature of 150° F. for 1 week with the door closed.

(*b*) Dripping of water from the cooling unit and accumulation of water on the bottom of the cabinet liner to a depth of one-fourth inch shall not cause water to enter the operating mechanism of the safety device.

(*c*) Scrubbing of any or all interior and exterior surfaces of the refrigerator with a wet cloth and cleaning compounds shall not cause water or cleaning compounds to enter spaces where gumming would change the force required to effect the release of the safety device.

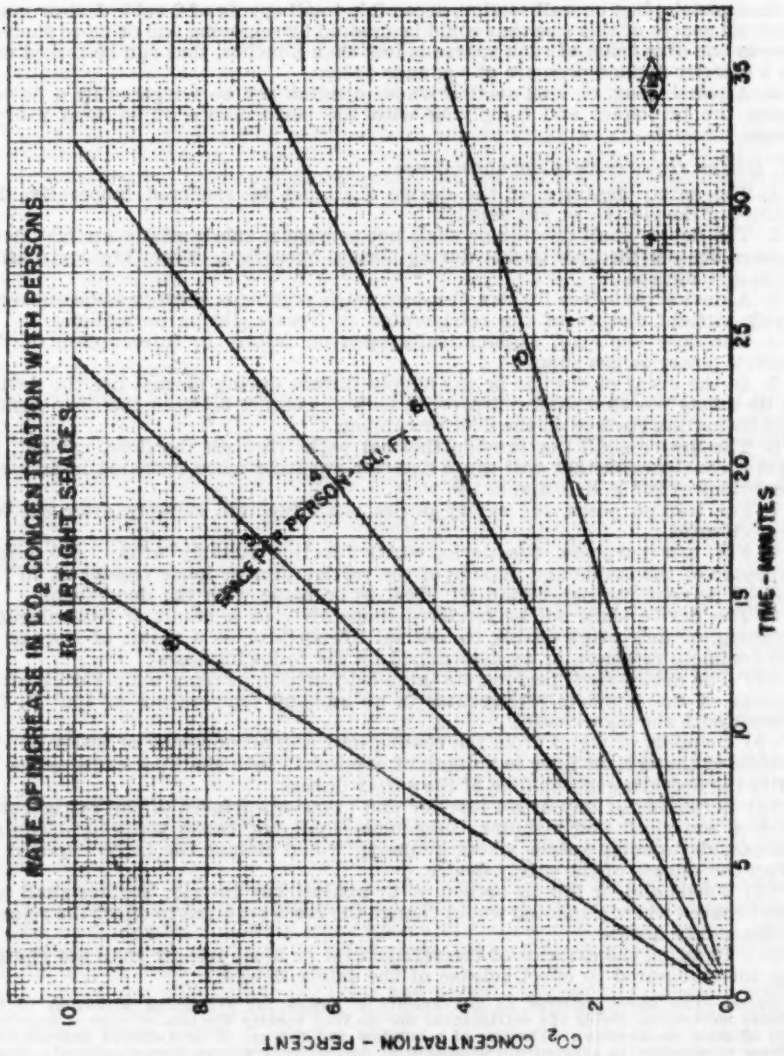
(*d*) Foods and/or liquids spilled on or against any interior surface shall not enter spaces where gumming would change the force required to effect the release of the safety device.

(*e*) Painting the exterior of the refrigerator or home freezer shall not change the force required to effect release of the safety device.

Notes.—The above criteria do not specify a means for attracting attention to the release mechanism inside the refrigerator nor do they specify the size or type of construction of such mechanisms. The use of a window and the use of luminescent finish on the release mechanism to concentrate attention at desired points have been suggested. These appear to have merit and should be considered.

The above criteria do not specifically include release devices that are present, and might be reset, such as a preloaded spring or a cylinder of compressed gas that would both release the latch and force the door open (even though the opening force required was more than 15 pounds) in response to pressure of less than 15 pounds on a trigger inside the cabinet. However, the wording of secs. 1–9 under safety requirements does not preclude such devices.

The force shown as * pounds in several of the release methods has not been determined. The preliminary recommendation of the National Bureau of Standards, based on studies made on about 70 children between the ages of 2 and 5 years, is 10 pounds. The manufacturers recommend a minimum of 15 pounds based upon practical manufacturing limitations. However, the data have not all been completely analyzed as yet. When they have been fully summarized and classified, a final selection should be made that provides a reasonable degree of safety.


RATE OF INCREASE IN CO_2 CONCENTRATION WITH PERSONS IN AIRTIGHT SPACES
SPACE PER PERSON - CU. FT.
TIME - MINUTES
CO_2 CONCENTRATION - PERCENT

Mr. ROBERTS. All right, Mr. Dies.

Mr. DIES. Mr. Price, I believe it was at our last hearing in July of 1955, was not that the date of it, that we met here and discussed this matter?

Mr. PRICE. Yes, sir.

Mr. DIES. And at that hearing, it was agreed that the industry and the Bureau of Standards and the Department of Commerce and others who were interested in it, would work together to undertake to perfect some safety device to be installed in these refrigerators; is that right?

Mr. PRICE. Yes; that is right, or to develop standards or criteria which may be used to judge properly the reasonable techniques of such device.

Mr. DIES. Well, the primary thing that we are looking for is some device or some gadget that will, if placed in a refrigerator, minimize the hazards of a child being locked in.

Mr. PRICE. Yes; that is right.

Mr. DIES. Yes. What was done toward finding some device that would accomplish this purpose? What we are now concerned about is to find out, in just plain language, what has been accomplished in an effort to perfect some device of that kind.

Mr. PRICE. There has been no concerted action to perfect a specific device, but, rather, individual manufacturers have been working on various types of devices which they felt would answer the problem.

I think, as we pointed out during the previous meeting, because of the differences in the construction of the various types of refrigerators and freezers it will probably be impossible to have a single device which might answer for all of them to solve the problem by itself.

Therefore, it was the feeling not only of the manufacturers, but it was concurred in by the Bureau of Standards, that a set of criteria which could be used as a yardstick should be set up to measure the effectiveness of a device that might be developed, and to which each manufacturer could certify, perhaps, through underwriters' laboratories, or some such organization that his particular device met these criteria.

Mr. DIES. Well, now, have you come up with any criteria?

Mr. PRICE. We have developed the criteria, yes, but one of the difficulties which has confronted us is the difference in the force which the Bureau of Standards feels may be necessary in order that a child 2 or 3 years of age might be able to exert in order to open the door, whether it be a mechanical latch, a magnetic closure, or some other type of closure.

As against the practical force in connection with the devices which are being experimented on and are being tested in some of the manufacturers' laboratories, it seems to indicate that possibly a minimum of 22 pounds may be required, whereas the Bureau of Standards feels that we should get down to a matter of approximately 10 pounds.

I think one of the telling discussions that we had involved representatives from the Children's Bureau, at which time it was concluded that in much of the work we had been doing, and a large part of the discussion of the problem that we had been, perhaps, treating this as an adult problem, or trying to determine what adults might do, whereas in reality we are dealing with children and a great deal of study, perhaps, needs to be done in the matter of child psychology to determine precisely what we might expect of children when they are enclosed in such a situation.

Mr. DIES. Let us see just what effort is being made to solve this problem. Now, have you held any meetings with representatives of the Bureau of Standards?

Mr. PRICE. Yes, sir; we have had about 4 meetings with them and 1 meeting with the Bureau of Standards and representatives of the Children's Bureau. We have had several meetings of our own manufacturers' group.

Mr. DIES. Well, now, let us take the meetings with the Bureau of Standards. Who was present at the meetings with the Bureau of Standards?

Mr. PRICE. Many of these gentlemen who are here, who are executive engineers, representing individual manufacturers.

Mr. DIES. Was it a representative group that pretty well represented the industry?

Mr. PRICE. It was a very representative group, representing, oh, probably 90 percent of the industry.

Mr. DIES. Now, at that meeting, you tried to agree upon some criteria applying to all manufacturers?

Mr. PRICE. That is right.

Mr. DIES. And your difficulty in agreeing about it was your inability to decide on the amount of pressure that had to be exerted from the inside in order to make the device work automatically; is that not right?

Mr. PRICE. Yes; that is right; that was one of the problems.

Mr. DIES. Let us take that one problem. Did not the Bureau conduct some sort of experiments with children?

Mr. PRICE. Yes; they did conduct experiments with children, but it was our mutual feeling that they were preliminary studies, not conclusive.

Mr. DIES. As a result of those preliminary studies, did they not reach, at least, the tentative conclusion that a child could exert its own weight or pressure? If a child weighed 12 or 15 pounds, it would require that amount of pressure; or what was the conclusion, if any, that was reached?

Mr. PRICE. If I recall correctly, the conclusion was not that a child could exert its own weight necessarily. The figures varied and varied considerably by groups and the position of the child in the enclosure, and there seemed to be, or there were, quite wide variations within individual age groups, and it was felt that the tests were not sufficiently conclusive to be used as a basis for the criteria.

Mr. DIES. I believe I have an excerpt here that says:

> The force shown as blank pounds in several of the released methods has not been determined.
>
> The preliminary recommendation of the National Bureau of Standards, based on studies made on about 70 children between the ages of 2 and 5 years, is 10 pounds. All manufacturers recommend a minimum of 15 pounds, based upon practical manufacturing limitations. However, the data have not all been completely analyzed as yet. When they have been fully summarized and classified, a final selection should be made that provides a reasonable degree of safety.

Now, that was written about 6 months ago.

Mr. PRICE. That is right.

Mr. DIES. Do you know what has been done since that, in the last 6 months, to evaluate these studies?

Mr. PRICE. It is my understanding that the Bureau of Standards has been working with the Childrens' Bureau to set up a research program, which I believe Dr. McPherson and Miss Fegre can tell you more about.

Mr. DIES. You see, here it is, "However, the data have not all been completely analyzed as yet." Do you know whether it has been analyzed?

Mr. PRICE. The data has been analyzed, and that is what led to the conclusion that further research investigation was necessary, that it is inconclusive.

Mr. DIES. Inconclusive—they reached no conclusion about it?

Mr. PRICE. That is right.

Mr. DIES. Now, in the meantime, some of these refrigerator companies have installed some devices, have they not?

Mr. PRICE. Yes, sir.

Mr. DIES. I note here in an advertisement that Admiral, for instance, advertises lifeguard, exclusive lifeguard, a new release that allows the door to be open from the inside, because the luminous lifeguard door release is visible even in the dark. Do you know anything about that device?

Mr. PRICE. Only what I have read.

Mr. DIES. Of course, the purpose of that device is to provide some way on the inside so that a child could release itself, and I presume the limitation on that is whether or not he or she would have sufficient intelligence to be able to use it; is that right?

Mr. PRICE. That is right.

Mr. DIES. It would seem to me, offhand, that even a device like that, even though it does not represent perfection, would be better than nothing. In other words, all refrigerators ought to be installed with at least that device in them, because I believe most children could use that sort of a device, especially if they were taught by the parents, if the parents had sufficient concern about it to say to the child, this refrigerator has this little device on the inside of it, and all you have to do is touch it to open the door. I would think that a child has to be very small not to understand that.

What I am concerned about here is that we get some action, even though it is not the final answer to the thing. If it would only save a few lives, and did not save all the lives, it would still be well worth installation, because such a device as this would be very inexpensive and could be very simply put into a refrigerator, and it would be better than nothing. What do you think about that?

Mr. PRICE. I think that Admiral has made a substantial contribution to the art, in what they have done. I would prefer to let Admiral speak for themselves, as they have representatives here.

Mr. DIES. Of course, I am not saying that this is the final answer by any means to the problem, because I recognize that there may be children who cannot use that device, or who lack the judgment or intelligence to use it. I have reared three children of my own, average children, and it seems to me with any sort of instruction that the smallest child could learn to press that button, this luminous door which could be seen from the inside, since the instinct of self-preservation is strong even in the smallest child, and everybody has the instinct of self-preservation.

I knew nothing about this until a few minutes ago, when my colleague, Mr. Roberts, who has done such splendid work on this, showed it to me.

It seems to me that such a device, even if it is not the final answer, would be better than not to have anything, or than to go along for another year or so and lose some more lives, which loss might be prevented. However, you prefer to have Admiral testify about this device?

Mr. PRICE. Yes; I would prefer to have Admiral testify about it, and I believe that several of the other representatives of manufacturing companies can tell you in greater detail what they, in fact, are doing along the same line.

Mr. DIES. Has there been any experimentation to discover whether it is possible to install some sort of a beam which, if intercepted, by a human body, would automatically open the door? I know nothing about this business. I am just asking to get information.

Mr. PRICE. I believe that has been investigated, and one of the difficulties with something like that is that something may flop within the refrigerator and intercept the beam while people are away for a week or something like that and then you run the risk of the spoilage of perhaps a considerable amount of food.

Mr. DIES. Of course, I do not know. I am just discussing something that is on my mind, but it would seem to me that with refrigerators built like most of them are, that there would be a clear passage and that it would be very unlikely that the beam would be intercepted, so that the minute the beam was obstructed, you would open the door. I am sure that there is an answer to it. I am asking to find out what can be done in the interim.

We have gone on for almost a year. I do not know how many children have lost their lives, I do not have that information. You say that there were 18 in 1955. I do not know what the number has been since that, from July up to the present time. I do not have those figures, but it seems to me I recall a figure of 18 which appeared in one of the Texas papers in an editorial calling attention to this serious problem and asking that something be done about it.

If we cannot get the final answer now, it seems to me that we could agree upon something that would be fairly inexpensive that would provide some measure of protection for these children.

Mr. PRICE. Of course, that is what we have been attempting to do through the development of these criteria and the development of the individual devices and methods of attacking the problem that have been worked on, and are being worked on, and developed by the individual manufacturers.

Mr. DIES. What other criteria are you having difficulty with? First, you are not certain as to the amount of pressure that a child would have to exert upon the door. What other problems are there?

Mr. PRICE. Well, one of the problems is the matter of drawers within doors. In some combination freezers and refrigerators, they have doors or drawers that are in those enclosures, within a door. Of course, what we are faced with right now is the determination that what we shall aim at is the opening of the main door, the principal door, without considering any possibility of a Rube Goldberg device or anything of that sort that might be necessary to release a child from the inner compartment.

Mr. DIES. Do many refrigerators have those inner doors in them?

Mr. PRICE. A number of them, the refrigerator-freezer combinations particularly may have that sort of thing in them.

Mr. DIES. Of course, in many of these refrigerators unless you took out the shelves, and the compartments and everything, a child could not get in in the first place, could he?

Mr. PRICE. In many cases, it would be difficult but they seem to get in.

Mr. DIES. They do?

Mr. PRICE. Yes. Some of them have been placed in there by older children, apparently, but they seem to be able to get in, even sometimes with the shelves in place.

Mr. DIES. Without taking out the shelves, they are able to get in there?

Mr. PRICE. Yes, that is right.

One of the most recent cases occurring in New York State involved a refrigerator which was not in use. It was on the back porch of a summer residence. The property was fenced in but some children had broken down the fence and had tipped the refrigerator over on its back and it would be almost impossible for a small child to open the door of the refrigerator, regardless of what type of release might have been in it. Just the weight of the door itself is a problem that is too much for a small child.

Mr. DIES. Well, that is the second problem that you are having difficulty with, the inner door. What else are you having difficulty with?

Mr. PRICE. Well, the point of application or pressure is one subject of discussion. My personal opinion is if we get a reasonable solution of the required pressure or the required force that we can iron out any remaining differences of opinion which exist.

Mr. DIES. Why can you not agree on some minimum pressure that you feel would be reasonably safe? As far as the refrigerator manufacturers are concerned, what is their opinion as to the amount of pressure that would have to be exerted?

Mr. PRICE. The experiments which have been made indicate that a minimum of 22 pounds is about what we need. However, that may be reduced over a period of time. It is the difference between approximately 20 or 22 pounds and 10 pounds which seems to be the stumbling block at the moment.

Mr. DIES. That is all.

Mr. ROBERTS. Mr. Mack, do you have any questions?

Mr. MACK. I have no questions, Mr. Chairman.

Mr. ROBERTS. We certainly want to thank you for coming, Mr. Mack. I want you to feel free to ask any questions which occur to you.

Mr. MACK. Thank you.

Mr. ROBERTS. Mr. Price, you remember in your testimony last year, you were considerably worried. I am talking about your statement on page 50. You were disturbed at that time about this matter of reasonable safety.

Mr. PRICE. Yes, sir.

Mr. ROBERTS. Have you had time to see what I am speaking of there?

Mr. PRICE. Yes, sir.

Mr. ROBERTS. As I understood it, you were distrubed at that time about this question of possible damage suits growing out of the warranty, or maybe it would be an implied warranty, perhaps, and I assume, too, that you had in mind that when you build a refrigerator you build one, of course, for a life of 10, 12, or 15 years. As I understand it, you are concerned about this problem of what is going to happen in the case of an abandoned box, which is subject to rust, corrosion, and so forth, that whatever device you place in that box would have to withstand those conditions. Are you still disturbed about that situation?

Mr. PRICE. To a certain extent, yes, sir. In the first place, we do have two problems. One is the problem of the live box, the refrigerator that is in use or which may be in use, and the other is the aban-

doned refrigerator. We believe strongly that we cannot, perhaps, perfect a device which may be required to operate after a refrigerator is abandoned. In other words, we believe that our problem is to take care of the problem for the in-use and the active refrigerator, as long as it may be used for the purpose for which intended.

The problem of the abandoned refrigerator is one which we believe must be continued to be handled through the removal of the door, or removal of the latches or something of that sort. As to mechanical devices or features of that sort, it is almost impossible to expect under those adverse conditions that they could be expected to function.

Mr. ROBERTS. Let me ask you this question: You know, of course, that some companies are now advertising refrigerators with a new child-safe magnetic door. You are familiar with that advertisement in the trade.

Mr. PRICE. Yes, sir.

Mr. ROBERTS. Now, I assume that there is a GE representative here, and maybe you would prefer that he answer this question, but is the fact that GE and Admiral are now advertising, one of them, the magnetic door, and the other the life-guard release, somewhat lessened your apprehension as to your liability in civil suits?

Mr. PRICE. Yes, I would say so.

It has been the feeling, I believe, of industry right along, however, that the preferred method of handling the entire situation would be a statement by the manufacturer that the refrigerator as designed with whatever safety device may be installed, meets certain minimum criteria for safety. I am not a lawyer and I am not qualified to speak expertly about that point, but we do have the feeling, and have had the feeling right along that what the individual companies may do and what they say is, of course, on their own responsibility, and presumably in accordance with their own legal dictates.

Mr. ROBERTS. Well, I do not know whether you ever made this statement or not, but I think it is pretty generally agreed that the refrigerator industry is a highly competitive industry. You would not argue that statement, would you?

Mr. PRICE. No, sir.

Mr. ROBERTS. Do you anticipate that other companies, in order to get their fair share of the consumers' market, will probably follow the lead of GE and Admiral in this business of trying to promote safety?

Mr. PRICE. I do.

Mr. ROBERTS. You hold that view definitely?

Mr. PRICE. I do. I believe I said in my concluding paragraph of my statement that two manufacturers have produced boxes of that sort and others may be expected to follow suit.

Mr. ROBERTS. Now, can you give us anything like a target date when you think that the members of NEMA will come up with some type of device that will meet the criteria which have been proposed by the Bureau of Standards?

Mr. PRICE. That I cannot do, no, sir. I would prefer that you perhaps put that question to the individual manufacturers who are represented here and perhaps they can give you a far better date than I can. I cannot commit the industry to something like that.

Mr. ROBERTS. I see.

You are an engineer, I believe. What is the difference between what you refer to as the door-sealing pressure and the pressure that would

be necessary that a child develop to push the door out? Would that be the same type of pressure?

Mr. PRICE. No, not necessarily. The door-sealing pressure may be considerably greater than the pressure necessary to release the door or open the door.

You might have a mechanically perfected device within the door, where a certain amount of pressure could not release it or otherwise unfasten the door from inside, and the combination of what might be required to accomplish that mechanical job plus the force necessary to open the door, because it may be a fairly heavy door.

Mr. ROBERTS. In other words, that would be similar, more or less, to a double lock on an automobile where sometimes you can partially unlock it but it does not wholly spring away from the frame?

Mr. PRICE. That is right.

Mr. ROBERTS. You might have in mind a mechanical toggle device in the door itself, more or less triggered by a magnetic device inside. That could be in the picture, could it not?

Mr. PRICE. That is right.

You may be familiar with the inside releases, if you want to call them that, that are in commercial refrigerator doors, but to get out it takes a pretty husky man and requires a pretty husky push, and not only a trigger device to open the door from the inside.

Mr. ROBERTS. In this whole picture, Mr. Price, although you say you are not free to speak for the industry as to when you may expect to, you do still feel assured that the industry will come up with a safety device which will be workable?

Mr. PRICE. I do.

Mr. ROBERTS. We are glad to have that reassurance.

Do you have any questions, Mr. Mack?

Mr. MACK. I am certainly in agreement with you, Mr. Chairman. I cannot answer how these manufacturers can develop various devices where refrigerator doors can be opened by stepping on a lever on the floor, and so forth, but these engineers cannot develop a similar device to open an icebox door on the inside.

This thing has continued, notwithstanding the fact that State laws now require that the doors be removed when refrigerators are discarded, in, I think, at least 36 States. We still have these instances occurring where children are found inside a stored icebox or an abandoned refrigerator.

I do feel very strongly that this type of legislation should be enacted, and then I believe that the engineers and the manufacturers would follow with an appropriate device to open the doors.

It does not seem to me, as I stated last year, that it should be difficult to develop some type of device that would meet the requirements.

Mr. PRICE. I believe I might answer that this way: I think your statement is correct; I think perhaps it is not difficult to develop something that will do the job, but whether it will meet the problem which has confronted us, whether it will do the job 10, 12, 13, or 15 years hence, or whether it will do the job with a child entrapped, or whether it will be of such type that it might defeat the fundamental purpose for which the refrigerator is designed, that is, the preservation of food, is a question. One of the things, of course, that we are confronted with at all times is the necessity for food preservation to not injure the health of a large number of people.

Mr. MACK. I appreciate the gentleman's statement. I have enough confidence in the engineers to feel that they could develop some type of device and still maintain the efficiency of the refrigerators.

Mr. PRICE. I think we all felt that it was a considerably smaller problem than it turned out to be, after we sat down together with the Bureau of Standards and started our discussions of these proposed criteria.

Mr. MACK. I realize that it is perhaps more difficult than I have indicated, but I still believe it is not impossible of accomplishment.

Mr. PRICE. I agree it is not impossible to accomplish.

Mr. MACK. It seems relatively simple to me to develop some type of device to open the door from the inside. All we are trying to do is just give these children a chance.

Perhaps they are not smart enough to open a complicated device, but let us have something there so that by accident they might open it, or at least, give them an opportunity to fight for their lives.

I appreciate your concern about the device that would work for 15 years, and that you cannot be sure about the device after 15 years, but let us develop one that would work up to the 15-year period, that would be the first step. Then we could develop a device that would work after 15 years.

Mr. PRICE. That is our immediate objective.

Mr. MACK. I am very much concerned about stored refrigerators, just as I am about abandoned refrigerators.

The chairman will recall a year ago at the time we had these hearings we had the case of two children in East St. Louis, Ill., who crawled into a stored refrigerator. It was stored in the garage and was not being used by the family. Certainly this type of device would have eliminated that situation, or would have eliminated a situation like that.

I do not know whether it is appropriate or not, but I wanted to call the attention of the committee to the fact that in my hometown newspaper just this last week they had a very enlightening editorial on this same point, stating that progress had been made, but that they still needed to develop a device that would actually give these children a chance to get out from the inside of an icebox. If you would like to have me include that in the record, I would be glad to do so.

Mr. ROBERTS. Without objection, it may be included in the record at this point.

(The matter referred to is as follows:)

[From the Macoupin County (Ill.) Enquirer, May 17, 1956]

STILL A HAZARD

Children still get caught in abandoned refrigerators.

In spite of nationwide publicity, over the past several years; in spite of the fact that 36 State legislatures have passed laws designed to prevent these tragedies, 18 more children suffocated inside refrigerators in 1955.

Children all over the Nation have lost their lives through the impulse to hide in an abandoned refrigerator—the perfect, too perfect, hiding place. Hence the legislation making it a misdemeanor (it should be a felony) to throw out a refrigerator without removing hinges and doors.

But, it should be remembered that not all of these children have died in discarded equipment on vacant lots or trash heaps. The kitchen refrigerator, empty and open for defrosting, is just as tempting when a hide-and-seek game is on and mother has gone to the store or is talking on the phone. In many homes, this deathtrap may be on the back porch or even in the basement.

It may be asking too much of the manufacturers, but why can't they be compelled to build a safety release on the inside of a box, so that the slightest pressure against the door would open it?

Mr. ROBERTS. I would like to thank the gentleman for his contribution and to say this, that the mail which is coming to my desk and the editorials which I see, demonstrate to me that the public is not at all satisfied with this situation. It is the general feeling that industry is dragging its feet on this proposition.

I think, as Mr. Mack said, that unless something shows up in the very near future, we are going to be put into the position of trying to get this legislation enacted, and I think you are going to be surprised as to the popularity of this bill with the membership of the House. The people are very much concerned about the fact that industry was supposed to come in during this period and that it was supposed to come up with some kind of a recommendation, and here it is almost a year since the hearings were had on this bill, and there is a contribution, and I think it is a great one, at this time by GE and Admiral, but there has been no effective answer by the industry.

Mr. PRICE. Let me say, Mr. Chairman, that the industry has not been dragging its feet; that we have been working diligently on the problem, but unfortunately we have run into these difficulties that I believe Dr. McPherson, for the Bureau of Standards, will discuss further with you.

Mr. ROBERTS. I believe that is all, Mr. Price.

Thank you, sir.

Mr. PRICE. Thank you, Mr. Chairman, and gentlemen of the committee.

Mr. ROBERTS. We have with us today and I think the committee is certainly honored to have him here, Dr. A. T. McPherson, Associate Director of the National Bureau of Standards, accompanied by Mr. Wyly, a member of his staff.

Do you prefer to have him sit with you when you testify, or will he make a separate statement, Doctor?

Dr. MCPHERSON. He will come up with me.

Mr. ROBERTS. Dr. McPherson has been in charge of experiments which have been made in trying to develop criteria which would be acceptable to the industry and it is a real pleasure to welcome you here, sir.

We will be glad to have your statement at this time.

STATEMENT OF DR. A. T. McPHERSON, ASSOCIATE DIRECTOR, NATIONAL BUREAU OF STANDARDS

Dr. MCPHERSON. Thank you, Mr. Roberts.

In accordance with the request from your subcommittee, the National Bureau of Standards of the Department of Commerce has been working actively with the industry, as represented by the National Electrical Manufacturers Association, in the seeking of a solution to the problem of the entrapment and suffocation of children in household refrigerators and home freezers. It has been the understanding of the Department that the manufacturers would accept the primary responsibility for the engineering development and production of appropriate safety devices and release mechanisms, and that the role of the Bureau of Standards would be the development of appropriate

criteria for the evalution of the devices and their type testing. Once such criteria have been established, routine inspection to determine compliance might be done by the underwriters laboratories as part of their regular inspection to determine compliance with electrical and other safety features.

In accordance with this general understanding the National Bureau of Standards took the lead in proposing performance criteria for devices designed to prevent suffocation in refrigerators and home freezers. These proposed criteria have been revised in accordance with very helpful and constructive suggestions made by the NEMA committee and have been released for further comment and discussion by interested persons. Conferences and discussions between the NEMA representatives and the Bureau staff have led to agreement on most of the proposed criteria. Differences that have not yet been resolved are for the most part between the ideal performance desired by the Bureau and practical limitations imposed by manufacturing difficulties.

In considering the effectiveness of the criteria both NEMA and the Bureau have been increasingly impressed with the importance of taking child behavior into account in designing and testing safety mechanisms. This was brought into consideration first in connection with the determination of the force necessary for operating a release mechanism. When this work was undertaken, no figures were available for forces that children of different ages might be expected to exert.

In order to get measurements of those forces the collaboration of the Children's Bureau was enlisted and a simulated device was made up, since the tests were made shortly before Christmas, of a Santa Claus chimney in which the children were placed and were instructed to exert force to open the door.

With that device these preliminary measurements were made.

It was found that a significant proportion of small children under certain circumstances did not exert forces in excess of 10 pounds. The manufacturers, however, regard a force of at least 22 pounds as the minimum required to secure the closure of a refrigerator door necessary to prevent food spoilage.

These preliminary measurements of the forces which could be exerted by children were obtained with the cooperation of the Children's Bureau of the Department of Health, Education, and Welfare. Tests were made on about 70 children of ages 2 to 5 years to determine the forces that they could exert by pushing in a number of different positions when confined in an experimental play enclosure of adjustable dimensions.

Consideration of the reactions of an entrapped child led to the conclusion that the only sure test of the effectiveness of a safety device would be to determine whether children could and would utilize such a device in an emergency. This basic problem can be solved only by a firsthand study of child behavior. It might appear that this study could be made by simply putting children into refrigerators equipped with release devices. The Children's Bureau, however, advises strongly against this procedure both because of the possible harmful effect of the experience on some children and because it might give them the idea of playing in refrigerators, which might lead to future accidents.

The Children's Bureau of the Department of Health, Education, and Welfare is now working to secure the cooperation of a qualified child-research organization to conduct studies of child behavior under appropriately controlled conditions in order to determine the behavior of children in relation to escape mechanisms by using simulated equipment rather than actual refrigerators.

Plans are currently under discussion to start those measurements in summer.

Even though the promulgation of criteria for evaluating safety devices will have to wait on the results of these child-psychology studies, the project is not standing still. The development of mechanisms and their study from the engineering standpoint is being actively pursued. On request from the Bureau, three safety devices have already been submitted and are currently under study to determine their engineering performance.

Suggestions regarding safety devices have been received from sources other than manufacturers. For example, one of these, a device for providing ventilation for refrigerators that are temporarily or permanently out of use, has been proposed by Col. G. B. Kidwell, retired. He is here this morning.

Mrs. Faegre, of the Children's Bureau, is here this morning. Mrs. Faegre is the author of one of the greatest-selling publications of all time outside of the Bible. Some of her publications through the Children's Bureau on Care of Infants and Small Children have gone to as many as 27 million copies.

In summary, manufacturers and others are actively designing and developing safety mechanisms which are being supplied to the Bureau for studying and testing. However, no final determination can be made as to what constitutes an effective device until adequate information which is presently sought is available as to whether children can and will use such devices under real-life situations. The development of criteria has progressed satisfactorily as far as the information and data available permit.

Mr. ROBERTS. Thank you, Doctor, for that fine statement.

Mr. DIES. Do you feel, Doctor, that progress is being made and that everything that can be done is being done?

Dr. MCPHERSON. Progress is being made, sir, and we are working hard on this.

Mr. DIES. Are you satisfied with the attitude of the industry with reference to this?

Dr. MCPHERSON. Yes, sir. They have been most cooperative. They brought 15 people to the Bureau for 1 meeting, they arranged a large meeting in New York for us. When we noted the fact that the gas-refrigerator industry was not a member of NEMA they arranged to have the gas-refrigerator industry brought into the conferences, so they have been most cooperative, sir.

Mr. DIES. That is my chief concern, that we give industry a full opportunity to develop this matter.

It has been my observation that a lot of legislation in haste and prematurely enacted only confuses the situation rather than solves it.

If you feel, and I know you have a very fine department in which we all have confidence, and I am sure the industry is just as anxious to come up with some satisfactory device as your Department is, if you

feel that every diligence is being used to find some device, that is a comfortable feeling to us.

And you do feel that way about it?

Doctor McPherson. Yes, sir.

Mr. Dies. You feel you have had the fullest cooperation?

Doctor McPherson. Yes, sir.

Mr. Dies. In the meantime, Doctor, do you think any progress can be accomplished by some separate installation of a device which might not be the full answer but still would provide a way for a child of sufficient intelligence to get out of a refrigerator?

Doctor McPherson. I think everything that can be done in that direction is highly desirable.

Mr. Dies. I understand it would not be a complete answer, but suppose the refrigerator companies in the interim, while these experiments were going on, would do what was suggested earlier, putting in an illuminated button, it would give assurance that if a child wanted to get out and had enough intelligence to get out, all he would have to do is to press the button, whereas with no device the child is simply trapped.

Doctor McPherson. We think that any device that can be proposed which would save some of the children would be highly desirable.

On the other hand, sir, we are reluctant to establish criteria which would allow some children to remain trapped.

Mr. Dies. I understand you. I think you are entirely right. It occurred to me that in this interim period if people of their own volition would install some sort of simple, inexpensive means by which a person on the inside of the refrigerator could, if the child had ordinary intelligence, get out of the icebox.

From my observation of children and the instinct of self-preservation, I would think most any child would get out of a refrigerator under those conditions, especially if the parents who are concerned about the child would simply show the child there is a button on the inside, that luminous button which all you have to do is to press.

Doctor McPherson. Our friends at the Children's Bureau, sir, suggest that we avoid experimentation with the children because they might get out of their own refrigerator but not be able to get out of a neighbor's refrigerator not provided with a button.

Mr. Dies. I am sure they know more than I do. I am not suggesting we experiment with hem. I have reared 3 children and have had a little to do with 3 grandchildren, I practice telling my children what to avoid. I had 3 little ones and had to carry them all over the United States, hotels and everywhere else. I found as a matter of experience, if you sit down and talk to a child and tell the child, they have far more intelligence for those things than we give them credit for.

I am not speaking about experimenting with them but simply informing them, and instructing them that inside the refrigerator there is a button and all you have to do is to press it. Don't put the child in there but use a little commonsense.

There may not be any validity to this suggestion but it seems to me that if something like that is done now voluntarily by the industry it would be helpful, and with the understanding it is not the final answer and it is not advertised as foolproof. Just simply tell what it is, that it is a button on the inside and if somebody presses it the door

will open. You don't advertise it for the purpose of getting customers but simply state the device is there.

I don't know what the reaction of a 2- or 3-year old child would be. However, I have the feeling it would at least provide some means of exist during the period your Bureau in cooperation with the industry is trying to accomplish something definite.

Mr. ROBERTS. Doctor, I believe that the criteria which was developed from the experiments performed by the Bureau of Standards are incorporated in your release of December 30, 1955, in the form of a letter, which contains about 9 safety requirements. Is that correct, sir?

Doctor MCPHERSON. Yes, sir.

Mr. ROBERTS. You stated on page 3 of your testimony that in substance the promulgation of criteria for evaluating these safety devices would have to wait until we have the results of these child psychology studies, which I believe you said would be held this summer.

In the meantime, just what is industry doing about the 9 recommendations that the Bureau of Standards has submitted?

Doctor MCPHERSON. They have sent us 3 devices for test, observation and test, sir.

Mr. ROBERTS. Were those sent by manufacturers or inventors?

Doctor MCPHERSON. By manufacturers.

Mr. Wyly has been making some measurements on them.

Mr. ROBERTS. Could you tell us about those devices in a general way, Mr. Wyly?

Mr. ROBERT S. WYLY. Of course, you have already spoken of the device of the luminous pushbutton. We have that device under observation. I don't know that there is anything I could add to clear that up, except that it is a luminous button, a ring 3 inches in diameter or so, and it is presumed if the child would push on that somewhere, that would be the only way he could make it work. It doesn't require great force to make that thing open.

Then we had two other devices submitted which are similar, but they work on somewhat different principles. On those devices you don't have to push at any specific location on the door to cause it to open.

The closer he pushes to the latch end of the door the better off he would be. If he pushes on the hinge end of the door he wouldn't get much effect. But the action of the unit in releasing the door is entirely within the latch mechanism itself inside the door.

I am sure you are all familiar with the square hole. When you open the refrigerator door there is usually a square hole where the latch mechanism is. Inside of this there is a type of latch mechanism which operates on the principle of a cam and it is somewhat complex to describe, but it is not too difficult once you see it. However, it works.

We have made some measurements on it and both of these devices work. One requires somewhat less force to operate than the other. Naturally we do not have under observation at this moment the magnetic door, but I believe that also is fairly well known at this time.

Mr. ROBERTS. I was intrigued with No. 6 which you show on page 3—device worked by the human voice in a suitable frequency. I would like to hear something about that device.

Mr. WYLY. I am not familiar with that. We have not had anything like that submitted to us. I imagine the manufacturers may have given it some thought, but I don't know.

Dr. MCPHERSON. If I may take that question, in the criteria we included everything that seemed reasonably conceivable. We did this, this device operating on a beam of light, but we did everything reasonably conceivable, and we may add additional criteria that are under consideration at the present time.

Mr. ROBERTS. Now going over to the bottom of page 5 of criteria, I would like you to elaborate a little more on the studies made on the 70 children between the ages of 2 and 5 years and your finding that the pressure of 10 pounds would be sufficient.

Dr. MCPHERSON. We studied children from 2 years to 5 years, and as I mentioned before they were put in a simulated device, a Santa Claus chimney, and instructed to push.

The force they exerted was registered by a scale which was read by an observer. The children exerted wide ranges of forces, but we picked 10 pounds because that would release the weakest and smallest child used in those experiments.

Some children could push 25 pounds or even more. In fact they pushed up to perhaps 40 or 50 pounds.

However, we feel that this particular set of experiments should not be taken as a final guide. We need more measurements under conditions more closely simulating those which will occur when a child is trapped in a refrigerator or other space in the dark.

Mr. ROBERTS. I could not quite reconcile the difference in what the manufacturers say they require, which I think was 22 pounds, and a statement I see here. It seems the Bureau and the manufacturers are still 10 pounds apart in their figures, which is a considerable gap.

Do you think you are correct in your findings that 10 pounds would be sufficient?

Dr. MCPHERSON. Ten pounds appears to us to be the minimum force which would permit all the children that we used in the tests to be released.

Mr. ROBERTS. Even the smallest?

Dr. MCPHERSON. Yes, sir. A larger force would release, say, a larger proportion of them. A force of 20 pounds would leave something like a fourth of the children still trapped in the refrigerator.

Mr. ROBERTS. Have you had any objections on the part of the industry to that finding of 10 pounds?

Dr. MCPHERSON. The only problem, sir, is their problem of how to meet it and devise a refrigerator door which would close and stay closed.

Mr. ROBERTS. Does this finding of 10 pounds still allow for correct refrigeration of foods?

Dr. MCPHERSON. No.

Mr. ROBERTS. That is simply the opening pressure?

Dr. MCPHERSON. Simply the opening pressure we would like to have, sir.

Mr. ROBERTS. I think there has been some confusion on that point. There certainly has been in my own mind, and I appreciate your getting that clear.

Certainly I recognize that you could have as great danger from spoilage of food as you have in building a refrigerator which would contain a gorilla.

Do you have any comment to make on these two devices which we know about which are presently on the market, the lifeguard by Admiral and the child safe magnetic door by General Electric?

Dr. McPherson. I think I have nothing more to suggest on them.

Mr. Roberts. I would like to thank you and Mr. Wyly for what I think was a fine statement.

We appreciate your presence and your fine work on that project.

Next we will call Mr. Marshall Bartlett. Mr. Bartlett is with General Electric.

Will you proceed with your statement, sir?

STATEMENT OF MARSHALL BARTLETT, PRODUCT PLANNING MANAGER, REFRIGERATION AND FREEZER DIVISION, GENERAL ELECTRIC—Resumed

Mr. Bartlett. I have no particular statement to make, Mr. Chairman. I will be very glad to answer any questions you may have.

Mr. Roberts. I think we are all quite interested in the fact that your company has recently put on the market, and I have seen the ads in a good many of the papers, a standard type refrigerator with a magnetic type closure.

I know for some time that your company, even as far back as 2 years ago, had the wall type closure.

Mr. Bartlett. Yes, sir.

Mr. Roberts. I would like to have your comments on how this was arrived at and when it was first incorporated in the standard type of refrigerator.

Mr. Bartlett. We used a magnetic type of closure back in 1950, and this varied somewhat from our present one in principle, although in actual usage they were quite similar.

The one we used back in the 1950's was what we called the magnetic gasket. This involved a standard type of gasket which was filled with tiny magnets, and as the door came close to the cabinet these magnets in effect pulled the gasket to the cabinet thereby effecting a seal.

This magnetic type of closure required a direct pull from the outside, or a push from the inside, of approximately 15 pounds.

The magnetic gasket, or the magnetic latch which we are now using on all of our standard refrigerators, is somewhat different in principle, as I mentioned before.

What we are utilizing now is a very soft gasket and a magnet which actually pulls the door to the cabinet.

I might explain it in this manner:

That prior to this time rather stiff materials have been used for gaskets. Obviously in any manufacturing process there is some imperfection in the door itself, in the cabinet face that that door must seal against, and also in the materials that are used for gaskets.

It was therefore necessary, through a latching mechanism, to in effect squeeze out these imperfections in the gasket material, if this makes sense. In other words, we had to use somewhere on the order of 45 to 65 pounds to actually squeeze this rather stiff gasket mate-

rial, in effect ironing out all the imperfections, and therefore accomplishing a good tight seal which was necessary for proper food preservation.

This squeezing can be done several ways. The way it has been most commonly done is with a latching device you are all familiar with. It could be done with a magnet, just placing a great big magnet in the same location the latch is placed, but unfortunately you would have to have a magnet which applied some 45 to 50 pounds of force, and this simply would mean it would be almost impossible for somebody to pull this door open.

What we have done in this present arrangement is to design a gasket which is very, very soft. In other words, instead of requiring 45 or 50 pounds to iron out these imperfections, we now require something on the order of 10 to 20 pounds, depending on the size of the door, to squeeze the thing, and again squeeze out these bumps and valleys, and make sure we have a good door seal.

Really our present arrangement is not so much the magnet as it is the development of a very soft gasket. We are now using a magnet which will apply this 10- to 20-pound force, and it does accomplish the seal with this soft gasket.

Mr. ROBERTS. Approximately how much magnetic material—you called yours the Alnico magnet——

Mr. BARTLETT. That is right.

Mr. ROBERTS. How much material do you use in a standard-size refrigerator door?

Mr. BARTLETT. I cannot give you the weight of the material. I can give you the size of the magnet. It is on the order of about 4 inches long by a half inch in cross section.

Mr. ROBERTS. Do you use more than one?

Mr. BARTLETT. Just one on the single door models.

Mr. ROBERTS. Approximately how much cost does that add to the refrigerator?

Mr. BARTLETT. As far as our present gasket is concerned it would add something on the order of $1.

Mr. ROBERTS. About a dollar?

Mr. BARTLETT. Yes, sir. It is a little difficult sometimes to extract out of a cost figure what the mechanism itself costs, because this is generally tied in with handles and devices in the cabinet, and so forth.

Mr. ROBERTS. You are talking about to the manufacturer?

Mr. BARTLETT. I am talking about to the manufacturer in this instance, which is quite different from what it would be to the consumer.

Mr. ROBERTS. I believe your company first went into this type of arrangement just prior to Korea; did you not?

Mr. BARTLETT. That is correct.

Mr. ROBERTS. Then you were faced with the fact you could not get the materials?

Mr. BARTLETT. That is right.

Mr. ROBERTS. And you abandoned it, but you did build about 600,000 new boxes with that type of closure?

Mr. BARTLETT. Yes sir.

Mr. ROBERTS. How much pressure from the inside does it take to open that box?

Mr. BARTLETT. I can cover both of those early boxes as well as our present ones.

Mr. ROBERTS. Let us take the present box.

Mr. BARTLETT. Because the pressures are about the same.

As I mentioned a few seconds ago, it varies with the size of the door. On the small doors, thinking of the small manual defrosting 8- or 9-cubic-foot refrigerators, we are talking in the neighborhood of 10 to 12 pounds.

In some of our larger doors we are talking poundages that are perhaps in the neighborhood of 15 to 20 pounds.

Mr. ROBERTS. I assume you speak of the area nearest the latch, are you not?

Mr. BARTLETT. Yes, sir. That pressure would increase as you moved closer to the hinge side of the door.

Mr. ROBERTS. Are you having any trouble so far as refrigeration is concerned with that type of closure?

Mr. BARTLETT. No, sir.

Mr. ROBERTS. You get just as good results from that type as you did with the mechanical type?

Mr. BARTLETT. Yes, sir. As a matter of fact, obviously we have to provide something which will preserve food, too. It was with a knowledge that this would do the food preservation job that we put it out.

Mr. ROBERTS. I want to say that I certainly feel the subcommittee owes you a vote of thanks for coming here today and we appreciate the fine work that your company is doing in this field and the leadership that General Electric has shown in developing a refrigerator which would be safe for children.

I think you certainly are due the thanks not only of this subcommittee but the people of the country for your fine leadership in this field.

Thank you very much.

Mr. Roy Buchanan, with Westinghouse Electric Corp.

You may proceed, Mr. Buchanan.

STATEMENT OF ROY S. BUCHANAN, WESTINGHOUSE ELECTRIC CORP.

Mr. BUCHANAN. I have no prepared statement, Mr. Chairman, but I would be happy to answer any questions you may have.

Mr. ROBERTS. I would like to have you go ahead and tell us what your company, one of the leaders in the refrigeration industry, is making in trying to solve this problem of child safety.

Mr. BUCHANAN. Mr. Chairman, we have been very much concerned about this problem, as you may well expect. Part of our concern, however, is not just the mechanical solution of it.

It was mentioned that almost a year has elapsed and there is a feeling that industry may not have done anything in this year.

I think it would be well to point out that most of the things that appear on refrigerators take much more than a year to develop, because we must not only be sure that they function to their intended purpose of refrigeration but we must have sufficient test time to make sure that we are not putting something out which the public, both we and the public, will regret.

These things, after they are conceived and tested, take some 6 or 8 months to tool and produce, so a year in this business we consider immediate. Development usually is 2, 3, and sometimes more years than that, depending on the complexity.

I am commenting on some things that have been mentioned on which I made notes. They may not be in direct order, but if you will permit me, I would like to comment on someone mentioning that we should work on something which we will be sure to work the first 15 years and then worry about time after that at a later time.

It should be pointed out that nothing mechanical that we do put on the market is guaranteed actually to function for more than 1 year.

We would like to be able to give firm assurance that anything we would advertise as being child safe or otherwise would function much longer than that, but I think it would be evidenced that it is highly improbable that we would be able to produce a mechanical device in this particular category which would be so much superior to some other mechanical device we normally make that we could expect this particular device to be functional far beyond any other mechanical device.

This gives us considerable concern, because we are deeply concerned about a false sense of security which may be promoted.

It has been mentioned here that any kind of device might be an improvement. Actually, if you will permit me, we feel that any kind of a device might actually increase the number of deaths due to the fact that, if it is claimed to be safe, it may encourage experimentation of children who are old enough to read ads and may experiment with their smaller neighbors, brothers, or sisters just to see if it would work.

If this is not a universal thing, and if they don't all work exactly alike, Mr. Dies mentioned you could instruct the child.

It is difficult to instruct a child there are exceptions to all these rules. While he might understand you could get out of a refrigerator by doing some certain thing, there are some 60 million refrigerators in service today which would not have this protection.

If even one child out of a million were induced to experiment, we might triple or quadruple the number of accidents which occur just by this encouragement. We are deeply concerned about that.

We believe even if such a safety device is provided, it should not be advertised for this reason, that it may lead children generally to believe they are now safe and actually create an upsurge of this experimentation which we believe is being played down by the great publicity of the danger.

Only by continuing to publicize the danger can we continue to reduce the number of these very horrible accidents.

It has been mentioned, although I think not brought out by expert testimony, that there is considerable doubt as to just what reaction a child has in the refrigerator.

This determines to a great extent the method by which a device is actuated. We don't know whether the children struggle and therefore we should make some device which will react to just general struggle, or whether a child is calm and will try to figure out just exactly what to do.

The position the child is in, the part the child is in, all will have direct bearing. It would certainly be wrong to lead the child to believe

he could escape when actually he can escape only if he is in a certain position and does a certain thing.

This concerns us as much as the mechanics. There are a great many mechanical things that can be done which you or I could use to open the refrigerator. We wonder about what we should devise for a child, and this is where we agree with the Bureau, that more study needs to be made so we can be better instructed as to the type of device required.

Mr. ROBERTS. Mr. Dies.

Mr. DIES. What experiments is your industry conducting along this line?

Mr. BUCHANAN. I believe I can say that we are doing most of the things that have been mentioned. We have experimented with a trippable mechanical lock, something like a pushbutton; burst open mechanical latches, mechanical latches which can be pushed open by pressure; with magnetic devices. Those are the principal things. Some of these things, such as a beam of light and voice actuated mechanism, we feel the complexity of such mechanism would make such mechanism highly unreliable. It would require considerable servicing to make sure the mechanism was in operable condition, so we are not considering that as a practical approach. We think it has to be something which would require no constant service to keep it in reasonable operating condition.

Mr. DIES. You have not yet come up with any device you are satisfied with?

Mr. BUCHANAN. No; not that we are satisfied with. I would say we could meet this 20–22 pound requirement at some particular location, or in a line, perhaps, but we question whether that is adequate and might actually lead to experimentation which would be fatal.

Mr. ROBERTS. Would you have any question about the elements on a magnetic-type closure?

Mr. BUCHANAN. I hesitate a little bit because I was trying to think of all the possibilities. It would seem that such a closure would fail, if at all, fail safe. It might fail in such a way that the refrigerator would not preserve food properly—that is, demagnetize with age or with some other circumstance, but this would fail safe so far as entrapment. It might fail other than safe so far as preservation of food. This would be up to the customer to maintain it in good condition for the sealing of the door.

Mr. ROBERTS. You do not think the magnetic-type closure would impose a burden on the consumer?

Mr. BUCHANAN. You mean from the standpoint of maintaining it or cost?

Mr. ROBERTS. Standpoint of initial cost.

Mr. BUCHANAN. That would require definition as to what is a burden. It would bring about a financial burden, but this as compared to the danger would have to be evaluated.

Mr. ROBERTS. Actually there is not a great deal of price difference in these models on the market now equipped with magnetic closure and the others that are not. There is no great rise in price; is there?

Mr. BUCHANAN. As an engineer I am not too familiar with retail prices.

Mr. ROBERTS. I believe that is all I have.

I noticed, Mr. Buchanan, that Mr. Benson and Mr. Fox also are here.

Mr. BUCHANAN. These are NEMA representatives and not connected with Westinghouse.

Mr. ROBERTS. I believe we have Dr. Faegre here. We would like to hear from you, Doctor.

STATEMENT OF DR. MARION FAEGRE

Dr. FAEGRE. I have no prepared statement, sir.

Mr. ROBERTS. From what I have heard of you, you probably have little need for a prepared statement, so you just go ahead and talk to us.

Dr. FAEGRE. The thing which has interested me, which I believe has not yet been brought out this morning, is that we have so little indication of whether or not children entrapped in a refrigerator will exert even the 10-pound pressure which we found it was possible for the smallest child to exert.

Mr. ROBERTS. Do I understand you to mean by that that we are not at all sure what happens when a child is facing suffocation?

Dr. FAEGRE. Yes, sir. I would like to go back to our experiment this winter in the Santa Claus chimney which was open at the top and had a window in the side as well. We had to work on the children considerably to get them to go in in the first place, because this was a strange-looking device, but we had to work even harder on them to get them to push their way out.

It seemed to me that the chances are that a 2-year-old entrapped in a refrigerator might very well make no effort whatever to get out other than to wiggle and struggle in the small enclosure in which he found himself.

Mr. ROBERTS. That is very interesting because in some of the news items which have come to my attention, I don't know whether this has been correct reporting or not, but in many of those instances they have reported that children will even tear their nails from their fingers in attempting to open the door.

What have you to say about that?

Dr. FAEGRE. I would suggest that probably those were older children than the 2-year-olds whom we must keep in mind, because 2-year olds are very, very likely to get into little enclosures in their play, but they are absolutely unpredictable as to their finding their way out of a problem situation.

I have in mind 1 example from the Institution where children of 2 to 5 have been observed very, very closely for many years.

The doorway that leads into a certain play room opens inward. The 2-year-olds mass up against that door seemingly not recognizing the fact that they have to move back a little before the door can be opened.

It is not until they are nearly 3 years old that they know enough to stand back so that the door can be opened when they are going into that room.

Children of two are very limited no matter how high their intelligence may be for their years in their approach to a problem situation.

I will give you another example of a child who wanted to close a door. There was a block lying between the door and the jamb. He

pushed the door. He got a chair and climbed up so he could get hold of the door handle to push the door shut, all the time oblivious of the fact that the block which was right there would have to be moved before the door could be closed.

The 2-year-old is very limited in his ability to think through a situation.

Mr. ROBERTS. You think that might not be true of older children?

Dr. FAEGRE. I think 3-, 4-, and 5-year-olds would have increasing ability to find the right place to push or to do whatever was necessary to get out.

Mr. ROBERTS. You think they might even be attracted to a luminous-type target?

Dr. FAEGRE. Yes, sir. I would question whether the 2-year-old would try to push or pull on something he saw which was lighted.

There are many instances in which the child in a dilemma, the 2-year-old in a dilemma, makes no effort whatever to solve the problem.

Mr. ROBERTS. Are you conducting some experiments this summer?

Dr. FAEGRE. We hope to conduct studies this year.

Mr. ROBERTS. Where will they be?

Dr. FAEGRE. Dr. McPherson and I have not had an opportunity to discuss such details, but I would assume they would be in Washington.

Mr. ROBERTS. What age groups do you intend to cover?

Dr. FAEGRE. Again I have not talked to Dr. McPherson, but my feeling would be that our sample should be composed of 2-year-olds because of the necessity of planning for this age group; that the 3, 4, and 5 can be expected to adapt much more reasonably.

Mr. ROBERTS. In other words, I take it you feel if you can protect the 2-year-olds you can protect the older ones; in fact, they would have have even more protection?

Dr. FAEGRE. Yes.

Mr. ROBERTS. I am sure you have been concerned with this matter for a long time.

Is it your feeling that industry will come up with something that is feasible, that is within the average buyer's price range so that these tragic deaths can be eliminated?

Dr. FAEGRE. I would hope so. I know nothing whatever about the engineering problems. I would hope so, but I would like to speak to the point that you always have the human element, and that the situation is absolutely unpredictable when you get a refrigerator in a household as to the number of ways in which things can go wrong.

Mr. ROBERTS. I will say this in commenting on that statement, and I think there is a lot of truth in what you say—I have not seen any deaths that have occurred in refrigerators which have been equipped with this magnetic-type closure.

How long do you think it would take you to arrive at some conclusions once you start these experiments?

Dr. FAEGRE. I would think we can do the first part of this experiment which would give us some notion as to what children might be expected to do, provided we can work out an enclosure which does not frighten them, by September. However, I would think the more haste the less speed. In other words, I feel very confident that the industry, the refrigerator industry, is wise in not rushing in with a lot of devices which, whether or not they are advertised, are calculated

to give a sense of security to parents where the security may not be justified.

It seems to me we should be very careful in that regard. Our speed in this particular experiment will carry us a certain distance, but only a certain distance.

Mr. ROBERTS. You think, then, by the end of the summer you should perhaps have some conclusions as to behavior which might be incorporated in this entire picture?

Dr. FAEGRE. I would think that would be possible.

Mr. ROBERTS. I want to thank you for coming, and ask you also if you will furnish the committee with a copy of the conclusions that you reach in these studies?

Dr. FAEGRE. Yes, sir.

Mr. ROBERTS. I believe with the exception of one more witness, Mr. Morehouse, who has been working on some safety devices, that we have heard all of the witnesses.

Mr. Morehouse, will you take the stand?

STATEMENT OF SILAS A. MOREHOUSE, PRESIDENT OF SiLOK, INC.

Mr. MOREHOUSE. I am Silas A. Morehouse, president of, and representing SiLok, Inc. As at past congressional committee hearings on the same subject, I favor enactment of effective legislation requiring that household refrigerators shipped in interstate commerce be equipped with devices permitting the doors to be opened easily from inside by a small child.

Both the Senate and the House committees concerned with this matter have in past hearings demonstrated willingness to postpone enactment of a law pending promised voluntary accomplishment of this goal by the refrigerator industry itself. But a sense of urgency appears to be lacking among the latter group. Refrigerator lock companies contend there is a lack of demand by refrigerator manufacturers for safety refrigerator locks, and refrigerator companies plead lack of availability of safety locks from their lock suppliers. Passage of the above bill would insure that all refrigerator manufacturers would, within the time set by said law, follow the lead taken by General Electric and Admiral on some of their models.

In conformance with the expressed desire of the House of Representatives Special Subcommittee on Health and Science, tentative criteria for safety refrigerator door closures have been submitted by the National Bureau of Standards and the National Electrical Manufacturers Association. The criteria show a sound approach to the situation. In order to offer a high degree of safety to small children, favorable consideration should be given to adopting the Bureau of Standards' preliminary recommendation of a maximum force of 10 pounds to open the door. It would also seem important that a sufficiently large area on which this force would be exerted should be utilized so that such area would not be missed by any small child.

Both the magnetic and the mechanical safety refrigerator door closers developed by SiLok permit the door to be opened easily from inside. They also prevent the door from being locked at all when the center shelves are removed or pushed out of place. They insure door-sealing pressures desired by the manufacturer. Lock components are long-lasting and are manufactured by companies of outstanding reputation in their fields.

The magnetic as well as the mechanical closers have been demonstrated at House and at Senate committee hearings in the past 2 years, with emphasis on their safety, practicality, and low cost. They have been made widely known throughout industry, and have been brought to the attention of several Government agencies such as General Services, Federal Housing, Commerce, Quartermaster Corps, and the Department of Health, Education, and Welfare. A SiLok-equipped refrigerator has been offered, for testing purposes, to the National Bureau of Standards and to other national testing laboratories.

In an effort to reduce the number of refrigerator suffocations, considerable attention has been focused on discarded refrigerators by safety-minded organizations, Boy Scouts, refrigerator manufacturers and dealers, and by the press, television and radio. However, only by discontinuing the installation of latching locks and installing only such closures as would remain safe throughout the entire life of the refrigerator can the hazard of entrapment of small children be eliminated. We again urge that a law requiring safety refrigerator door closures be enacted during this 2d session of the 84th Congress.

Mr. ROBERTS. Thank you, Mr. Morehouse.

I don't know of anyone who has worked harder on this problem than you have, and I want to say you have been very helpful to the subcommittee and I want to thank you for your appearance here today and your statement.

I have no questions.

STATEMENTS OF W. R. MOLL, ASSISTANT CHIEF ENGINEER, REFRIGERATION DIVISION, ADMIRAL CORP.; AND J. R. OBERLY, ADMIRAL CORP., GALESBURG, ILL.

Mr. ROBERTS. We have with us Mr. W. R. Moll and Mr. J. R. Oberly, representing the Admiral Corp.

Mr. MOLL. Yes, sir.

Mr. ROBERTS. It is my understanding that you do not have a prepared statement?

Mr. MOLL. Yes, sir; that is correct, Mr. Chairman.

Mr. OBERLY. We will be very happy to answer any questions that you have, Mr. Chairman.

Mr. Moll also is working immediately on a particular device which you might be interested in seeing.

Mr. ROBERTS. Yes; I would like to see it.

Mr. MOLL. I might add that our interest in the device in the latter part of 1954 may have been coincidental with the publicity at that time. In 1954, and early 1955, we developed the device and we used it on our 1955 model line, carrying it through 1956, of course.

Mr. ROBERTS. I would like to know how you came to use that particular device. Was it developed in your company?

Mr. MOLL. Yes; we gave the problem to a group of—a small development group of 3 or 4 men in the middle of 1954. After going through several devices they came upon this one and we completed the tooling of it in the beginning of 1955 and installed it in the 1955 model line, and continued it in 1956.

Mr. ROBERTS. Now, I have seen some pictures of it, and I believe you have a working model with you?

Mr. MOLL. Yes.

Mr. ROBERTS. Would you like to demonstrate that to the committee?

Mr. MOLL. Yes.

(The device was demonstrated to Mr. Roberts at the committee bench.)

Mr. ROBERTS. Let me ask you this: Approximately how much additional cost on the consumers is required by the inclusion of that release?

Mr. MOLL. Forty-nine cents.

Mr. ROBERTS. Forty-nine cents?

Mr. MOLL. That is our manufacturing cost.

Mr. ROBERTS. The whole manufacturing cost is 49 cents?

Mr. MOLL. Yes, sir, 49 cents.

Mr. ROBERTS. Have you had comments from the consumers about that particular release?

Mr. MOLL. Yes, sir; we have had. I believe Mr. Oberly has several of those. We have been commended by the refrigeration-service organizations, one, I believe, in Texas particularly.

Mr. ROBERTS. By refrigeration services?

Mr. MOLL. Yes, sir; that is right.

Mr. ROBERTS. I think you are certainly to be commended for your efforts in the direction of child safety, and I hope and assume that you are continuing to work on this problem?

Mr. OBERLY. We are continuing to work on the problem of trying to improve what we now have. In addition, this particular device has two aspects of it which are important. One is the question of the amount of pressure which is required to activate the mechanism, which, if I understand correctly, is about 4 or 5 pounds.

Mr. ROBERTS. I think that was the statement Mr. Moll made.

Mr. OBERLY. The second point is by having a luminous face, it will attract children, we hope on down to the 2-year level.

Mr. ROBERTS. As to the luminous part of it, would the effect of it be destroyed by rust and corrosion elements?

Mr. MOLL. It is a nonmetal piece of plastic, made of light, sensitive material.

Mr. ROBERTS. And you think that would be good for, say, 15 years?

Mr. MOLL. Yes, I would say so.

Mr. ROBERTS. And it would still maintain its luminous qualities?

Mr. MOLL. Yes, sir.

Mr. ROBERTS. This photograph, together with this advertisement of Lifeguard will be included in the record at this point.

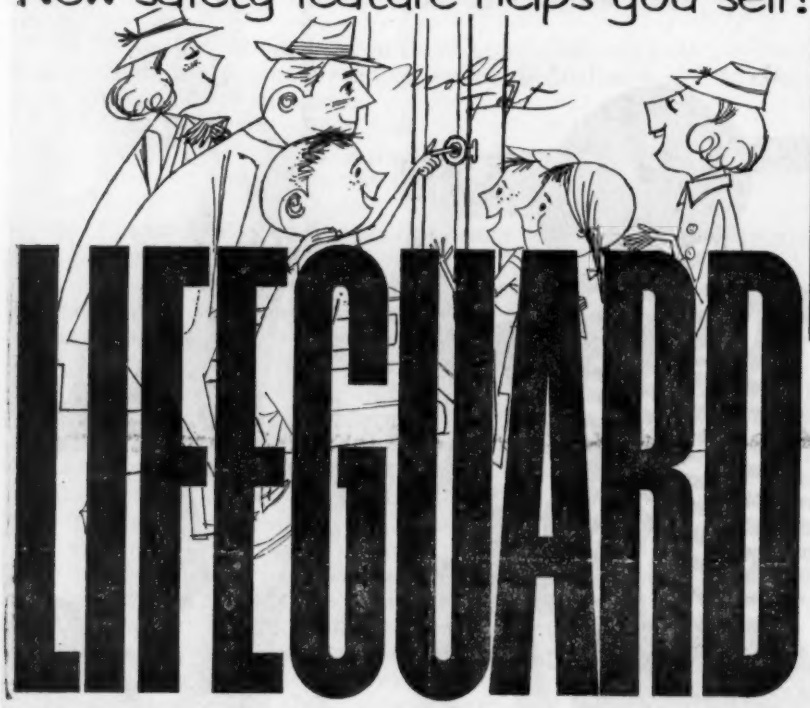
(The matter referred to is as follows:)

NEW LIFEGUARD REFRIGERATOR RELEASE

This exclusive refrigerator inside door release has been developed by Admiral Corp. engineers as the solution to the problem of children getting trapped in refrigerators. Michael Brent is showing Suelen Helland the new Lifeguard release which glows in the dark and opens at the slightest touch. The special door mechanism is incorporated in the company's new line of refrigerators. (Over 110 children have been suffocated inside abandoned refrigerators during the past 10 years, 18 of them in 1955.)

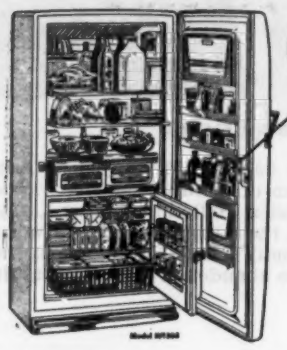
New safety feature helps you sell!

Sec. 2 RETAILING DAILY, MONDAY, APRIL 30, 1956



LIFEGUARD

-and only **Admiral** has it!



Admiral. DUAL-TEMP
REFRIGERATOR-FREEZERS

Here is the biggest contribution to home safety in the refrigeration industry in years—Admiral's exclusive LIFEGUARD. It's an exclusive new release that allows the door to be opened from the *inside*. Because it's luminous, the LIFEGUARD Door Release is visible even in the dark. Every family with children will appreciate this *important* safety feature. And *only* Admiral has it!

SELL ADMIRAL REFRIGERATORS from only $169.95
(Model 9200 in choice of 4 colors)

Admiral. -Puts the Bright New Look in Products · Promotions · Profits!

Mr. ROBERTS. I would like to thank you gentlemen for coming here, and we appreciate your cooperation with the subcommittee.

Mr. OBERLY. Thank you, sir.

Mr. ROBERTS. I believe Col. Gaylord Kidwell, who has been referred to by Dr. McPherson as having developed a safety device, is present. I wonder if Colonel Kidwell would like to make a statement to the committee.

Colonel KIDWELL. Yes, sir.

Mr. ROBERTS. We would be glad to hear you, Colonel.

STATEMENT OF COL. GAYLORD B. KIDWELL, ARLINGTON, VA.

Colonel KIDWELL. My name is Col. Gaylord B. Kidwell, United States Army, retired.

This statement is related to recommendations I have made to the Bureau of Standards in the early part of the year to which reference has been made in previous testimony.

My appearance here today is in the capacity of an interested private citizen who has followed the deliberation of Congress on this hazard to young children with admiration and respect. It is my sincere hope that my observations will be of some assistance to the committee.

The concern and attention that this problem has received from the Congress and the industry over several years seems to have been characterized as an intense search for an automatic device by which a captured child might release himself from the inside of a refrigerator or freezer.

This national attention has been the inspiration for the enactment of a large number of State laws requiring the public to take precautionary actions with idle refrigerating equipment.

It has also been the inspiration for the advancement of many safety and educational programs aimed to persuade the public to take similar actions as those required by these State laws.

Within these areas there appears to rest a new but allied problem which is being expanded each day that the perfection and implementation of an escape device is delayed, and manufacture of current design continues to enter the market.

The new problem is that while it may be presently unavoidable, the public is being asked to perform unwieldy and difficult precautionary measures. This may in some degree be responsible for the limited success these efforts have realized in preventing these tragic accidents.

The precautionary actions now expected of the public range from the removal of heavy doors, locks, hinges, gaskets, to even boring holes in the cabinets themselves.

Some of these actions approximate mutilation of equipment if intended for further use in its refrigerating function.

That these actions present a difficult problem to the average housewife upon whom a share of the surveillance of idle equipment will normally fall is not difficult to appreciate.

The prospect for the perfection of an automatic escape device is pessimistic. This is not due to any lack of technological talent in American industry but entirely to the imponderable as to what a captured child will do in panic and darkness. If he faints or "freezes" into immobility from fright no device activated by his efforts or exertion will save his life.

It therefore seems that the time may have come to consider the adoption of a simple and standard manual means by which a person can render an idle piece of equipment nonairtight and thus harmless. This is the purpose and objective of cumbersome precautionary actions now advanced.

The removable plug or section in the door directly behind the handle of refrigerators and freezers suggested by me to the Bureau of Standards seems to meet the need. Upon removal it would admit ventilation, dispel darkness, and conceivably permit a captured child to release himself by operating the handle through the opening afforded. In any event the child would not suffocate. The plug or section could be removed at any time the equipment was out of use to include times of transport, storage, display for sales, defrosting and upon abandonment or discard. It could be reseated with ease by an adult when desired to restore the equipment to refrigerating use.

Broader advantages are viewed as follows:

It would involve no patent rights to employ and thus be open to all manufacturers.

It would in no way restrict the continued search for refinement by way of mechanical escape devices.

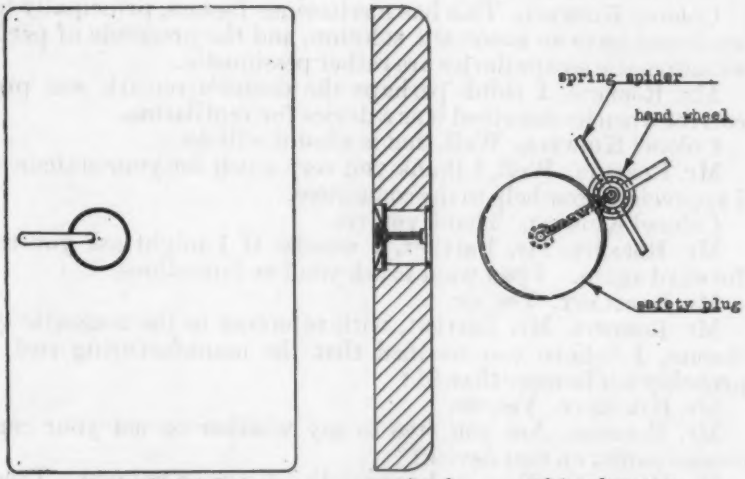
It would supply a basic remedy to this vital health and survival problem by placing the public in a better position to cooperate with programs and to comply with law by reason of this simple and standard technique provided by the manufacturer.

I respectfully submit this for your consideration with the thought that it might be your pleasure to ask the Bureau of Standards and the industry to explore the engineering feasibility in their current collaboration.

(The diagram accompanying the statement is as follows:)

A SAFETY PLUG FOR REFRIGERATOR AND FREEZER DOORS TO ELIMINATE THE HAZARD OF SUFFOCATION IN IDLE EQUIPMENT

Gaylord B. Kidwell,
February 1, 1956.



door - front view

sectional side view

safety plug assy.

1. Safety plug is insulated, gasketed, and retained in place by screw and spring tension.
2. Safety plug is removed and re-seated only by operation of hand wheel on inner side of the door.
3. Removal of safety plug provides for the admission of ventilation, the dissipation of darkness, and the possible operation of the door handle from the inside through the opening afforded.
4. Exposed surface of the safety plug may be ornamental and integrated into other artistic features in design.
5. Removal of safety plug is contemplated when equipment is not in use for refrigeration to include times of transport, storage, display for sales, and ultimately upon discard or abandonment.

Mr. ROBERTS. Now, Colonel, I want to thank you very much for your interest in this matter and for your statement. Let me see if I understand exactly what your invention would do. As I understand it, it would be a detachable section in the door that for periods of defrosting or if the refrigerator is abandoned or when it is out of use, would simply come out of the door. Is that the idea?

Colonel KIDWELL. That is essentially it. It is not dignified to the status of an invention, as the engineering principles are simple, allowing much latitude in securing and releasing it. It can be integrated into the ornamental design of the equipment. It is a porthole or section of the door which can be removed by the owner from the inside by a screw to break the tension whenever the icebox is not going to be in use, and can be reseated with equal ease.

Mr. ROBERTS. I see.

Colonel KIDWELL. This has meritorious factors, principally because we do not have an automatic solution, and the prospects of perfecting an automatic escape device are rather pessimistic.

Mr. ROBERTS. I think perhaps the doctor's remark was probably correct when he described it as a device for ventilation.

Colonel KIDWELL. Well, that is what it will do.

Mr. ROBERTS. Well, I thank you very much for your statement, and I appreciate your help to the committee.

Colonel KIDWELL. Thank you, sir.

Mr. ROBERTS. Mr. Bartlett, I wonder if I might ask you to come forward again. I just want to ask you 1 or 2 questions.

Mr. BARTLETT. Yes, sir.

Mr. ROBERTS. Mr. Bartlett, with reference to the magnetic type of closure, I believe you testified that the manufacturing cost would probably not be more than $1?

Mr. BARTLETT. Yes, sir.

Mr. ROBERTS. Are you free to say whether or not your company owns a patent on that device?

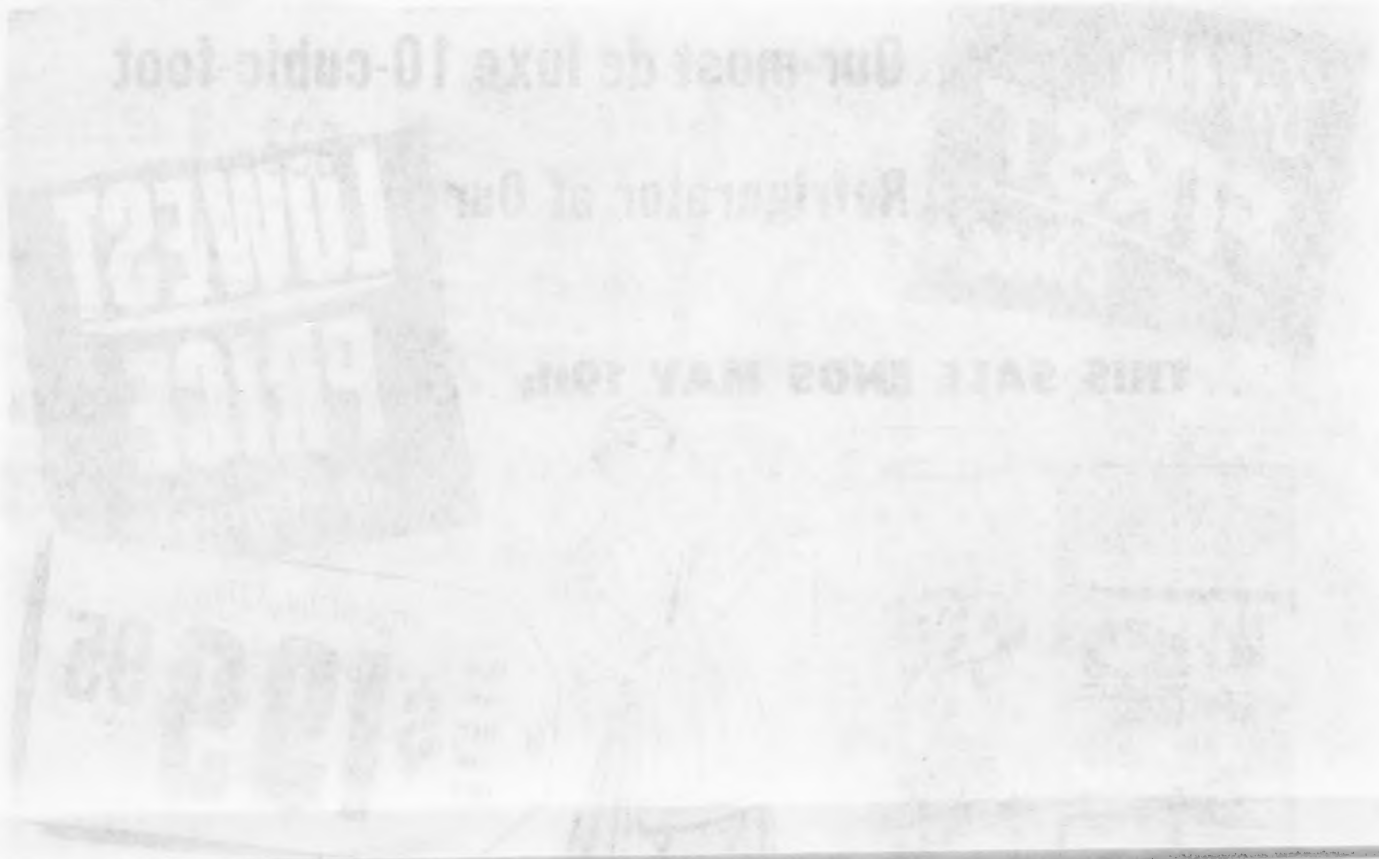
Mr. BARTLETT. Yes; we have applied for some patents. These patents cover primarily the gasket rather than the magnet itself. That is the principal part of this thing. Then we are preparing to grant licenses under whatever patents may be given us. Our only interest, of course, is in recovering the development costs.

Mr. ROBERTS. In other words, you would make it available to the entire industry if the industry is interested in operating under it?

Mr. BARTLETT. Yes, sir.

Mr. ROBERTS. These advertisements which appeared in the Washington Evening Star under date of May 9, 1956, will be included in the record at this point.

(The matter referred to is as follows:)



THE EVENING STAR, Washington, D. C.
WEDNESDAY, MAY 9, 1956

for the FIRST time— Our most de luxe 10-cubic-foot Refrigerator at Our LOWEST PRICE in History!

THIS SALE ENDS MAY 19th

(Model LB 10 N)

original list $279.95

NOW THRU MAY 19th ONLY **$199.95*** ... with your old refrigerator

1956 Dial Defrost

GENERAL ELECTRIC

REFRIGERATOR

with exclusive new magnetic door...

—**Magnetic Door**—closes automatically, seals in cold 8 times better—child safe, can be opened from inside.

—**Full Width Freezer**—holds up to 45 pkgs. frozen food.

—**Full Width Chiller Tray.**

—**Removable, Adjustable Door Shelves.**

—**Egg Rack, Butter Compartment, Stackable Vegetable Drawers.**

- **New Magnetic Door**—Opens Automatically at touch of fist—closes automatically.
- **Revolving Shelves**—bring all food up front like Lazy Susan.
- **Automatic Defrosting Refrigerator** with removable, adjustable door shelves, Fold-Away Bottle Racks, Butter Conditioner, Cheese Compartment, Vegetable Drawers.
- **Big True Zero Deluxe Freezer**—holds up to 32 lbs. frozen food.

Huge $100 Trade Savings

de luxe 1956 11-cubic-foot

G-E REFRIGERATOR-FREEZER combination

originally $399.95

SPECIAL 9 DAYS ONLY

$299.95* with your old refrigerator

★ Magnetic Doors ★ Revolving Shelves

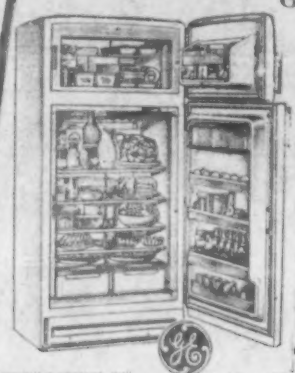
(Model LM-11 N)

$100 SPECIAL TRADE REDUCTION!

G-E deluxe two-door 12-cubic-foot

REFRIGERATOR-FREEZER combination

MAGNETIC DOORS
REVOLVING SHELVES



originally $499.95

9-DAY SPECIAL

$399.95* with your old refrigerator

(Model LH-12N)

—**Magnetic Doors,** a G-E Exclusive, close automatically, leave both hands free.

—**Revolving Shelves!** Greatest capacity and convenience—brings all the food up front.

—**Big No Defrost Refrigerator**—with automatic food-packed door opener, removable, adjustable door shelves, Fold-Away Bottle Racks, Butter Conditioner, Cheese Compartment, Vegetable Drawers.

—**Extra Capacity True-Zero Freezer,** 80 lbs. frozen food capacity, juice can dispenser, ice cream rack, Mini-Cube ice trays.

A-16 THE EVENING STAR, Washington, D. C.
WEDNESDAY, MAY 9, 1956

Baron & Meltz

FALLS CHURCH 440 S. Washington St. | WASHINGTON 409 11th St. N.W. 604 F St. N.W. | WILLSTON 6475 Arlington Blvd.

TOMORROW & FRIDAY
from 9 a.m. to 7 p.m.

10 HOU
2 DAYS ONL

FOR THE FIRST TIME
LOWEST PRICE IN HISTORY

THE MOST DE LUXE 10-CUBIC-FOOT
1956 Dial Defrost
GENERAL ELECTRIC
REFRIGERATOR
WITH NEW CHILD-SAFE MAGNETIC DOOR

Original list price 279.95

199.95
WITH YOUR OLD REFRIGERATOR

Magnetic Door—closes automatically, seals in cold 8 times better—child safe, can be opened from inside. Full Width Freezer—holds up to 48 packages frozen food. Full Width Chiller Tray. Removable, Adjustable Door Shelves. Egg Rack. Butter Compartment. Stackable Vegetable Drawers.
(Model LB 10 N)

CONVENIENT TERMS ARRANGED

Mr. ROBERTS. That is all. Thank you very much, Mr. Bartlett.

That will conclude the hearing on H. R. 2181, subject to the call of the Chair.

I would like to thank all of you who participated in the hearing and to thank you for your interest in this important matter, and for the contributions that you have made by your presence and by your statements here.

The committee will stand adjourned.

(Thereupon, at 12:25 p. m., the subcommittee adjourned subject to the call of the Chair.)

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